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EXHAUST EMISSION ANALYSIS AND MODE CYCLE DEVELOPMENT FOR GASOLINE-POWERED TRUCKS

Ethyl Corporation
Ferndale, Michigan

September 1967

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EXHAUST EMISSION ANALYSIS AND MODE CYCLE DEVELOPMENT FOR GASOLINE-POWERED TRUCKS

for
U. S. Public Health Service
Division of Air Pollution

under
Contract No. PH 86-66-150

by
ETHYL CORPORATION
Ferndale, Mich. 48220

Final Report
September 1967

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FOREWORD

The test work reported herein represents the third and final phase of a long-range truck test program aimed at the development of chassis dynamometer mode cycles for trucks in three weight groups. The primary requirement of the developed dynamometer cycles was to provide truck modes of operation and exhaust emission characteristics that closely resemble those of trucks operated in typical city service. The first phase of the program was begun in 1962, and the final phase--the subject of this report--was completed July 1967.

The final test work was carried out under the overall direction of Dr. Ellis B. Rifkin, Director of Contract Research. Reporting to him as project supervisor was Mr. Cleveland Walcutt, who holds the title of Senior Research Associate. Mr. Walcutt was primarily responsible for planning the details of the work described in this report. Field and dynamometer operations were under the direction of Mr. Gilbert Way, Senior Engineering Associate, and Mr. W. A. Steele. Instrument development and modification was the responsibility of Mr. J. D. McCullough, Supervisor, Instrument Section, and Mr. Carl Alsterberg. Computer programming was done by Mr. G. W. Thomson, Senior Research Associate. In addition to the men named above, numerous technicians and assistants played an important role in achieving the objectives of the project.

We wish to acknowledge the assistance received from many individuals and companies in the truck-manufacturing industry. Chrysler Corporation, Ford Motor Company, and General Motors Corporation were very helpful in supplying trucks and engine parts and assisting in the calibration of air-measuring equipment. We are grateful to International Harvester Company for supplying needed engine parts and to the A. M. A. Heavy Vehicle Panel for furnishing information and recommendations on the trucks used in the program. Special acknowledgement is made to the GMC Truck and Coach Division for processing the bulk of the California-cycle chart data.

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I. INTRODUCTION

Since trucks consume about 25% of the gasoline used in road vehicle operation, a mode cycle is needed for evaluating the exhaust emissions from trucks as well as from passenger cars. Actually, the need for a mode cycle for trucks is greater than that indicated by the relative amounts of fuel consumed by the two types of vehicles. Since trucks generally operate at wider throttle openings than passenger cars, trucks probably contribute more to the air pollution problem per gallon of fuel consumed.

This study is the third and final phase of a long-range, three-phase program initiated by PHS in 1962.

The first phase of this three-phase program (Contract No. PH 86-62-12) was a survey of truck and bus operating modes in the cities of Detroit, San Francisco, and Los Angeles and is reported in Ethyl report No. GR 63-24. The second phase, which involved testing of a single truck in the Detroit area, was a feasibility study to determine if a mode cycle could be developed that would provide exhaust emissions reasonably close to those obtained in road operation. This work was conducted under Contract No. PH 86-64-125 and is reported in Ethyl report No. GR 66-37. The positive and encouraging results obtained from the feasibility study led directly to the third phase of the overall program -- that of developing chassis dynamometer mode cycles for trucks based on the operating modes determined in the first phase. Results from the final study are reported herein.

The approach used in the final phase was first to develop road routes in the Detroit area such that the modes of truck operation closely resembled the observed modes of trucks operating in the Los Angeles area. Three routes were developed representative of the modes of operation of trucks in three weight groups, namely 6000 to 10,000 lb, 10,000 to 19,500, and over 19,500 lb gross vehicle

weight (GVW). This development was done using a single truck selected as being the most representative of the trucks in each group.

Following this, ten trucks in each weight group, selected as most representative of those in service, were driven over the appropriate route for these trucks. During road-route operation on each truck, the modes of vehicle operation were recorded and exhaust gas samples were obtained with the PHS-developed proportional sampling equipment.

Vehicle mode operating data were analyzed and summarized by means of a special computer program. The exhaust emission samples were processed for emission constituents on both a concentration and a mass basis.

Three chassis dynamometer mode cycles were then developed, one for trucks in each of the three weight groups. This development was done with the one truck selected as being most representative of the ten trucks in each weight group. Following the development of a mode cycle for this truck, the other nine trucks in each group were operated on the chassis dynamometer in accordance with this cycle. During this operation, the modes of vehicle operation and the exhaust emissions were measured on each truck as in the road-route tests. The same trucks were used in both road and chassis dynamometer work.

II. SUMMARY

Four Detroit-area road routes were first developed for trucks in four gross vehicle weight (GVW) classifications. These routes were selected to provide modes of operation similar to those for trucks operating in the Los Angeles metropolitan area. Chassis dynamometer mode cycles were then developed to simulate the observed operating modes of the trucks when driven on the Detroit road route. (Trucks under 6000 lb GVW were eliminated from the latter part of the program, thus reducing the scope of the work to the development of three dynamometer mode cycles.) For use in the test program, ten trucks in each weight group were selected as being most representative of those on the road.

In developing the final chassis dynamometer mode cycles, simple theoretical cycles were first devised to represent the major operating characteristics of trucks on the road. These theoretical cycles were comprised of about 12 separate modes including necessary gear shifts. The theoretical cycles were then transformed to meet the practical requirements of truck operation on a chassis dynamometer while adhering as closely as possible to the theoretical features.

From analysis of the test data, it was found that individual trucks, when operated on their appropriate chassis dynamometer mode cycle, gave exhaust emissions and vehicle parameter and mode values that were in close agreement with the observed Detroit road data for these variables. Based on the ratios for each measured emission variable and vehicle parameter value established by dividing chassis dynamometer data by road data, the following conclusions are reached:

1. In general, the averages for the ratios are close to a value of 1.0, indicating that mode cycle and road data are equal.
2. Standard deviations of the ratios are about 10 to 20% of the averages.
3. In almost all cases, the range of the confidence limits for the ratios indicates that the average is not distinguishable from a

value of 1.0 at the 95% probability level, meaning that the averages for the ten trucks run on the chassis mode cycle are equal to the averages for the same trucks run on the road.

4. Using two standard deviations (two times the standard deviation) as the confidence limit of individual measurements (average of two tests) at the 95% probability level, maximum deviations show that nearly all tests on individual trucks give values on the chassis mode cycle for exhaust emissions and vehicle parameters that are indistinguishable from those obtained on the road.

In addition to the work on mode cycle development for a chassis dynamometer, five to six trucks in each of the three heavier weight groups were tested by the California truck cycle (California Test Procedure and Criteria for Motor Vehicle Exhaust Emission Control) while employing both the proportional bag sampler and continuous chart readings. The conclusions drawn from these tests are:

1. For the same trucks, data obtained by the California truck cycle are in poor agreement with actual road data.
2. HC and CO emissions by the California truck cycle are about one-half of road values (on both a concentration and mass basis), while NOx values are about 50% greater than on the road.
3. Average air consumption on the California truck cycle is generally lower and average vehicle speeds higher than on the road.
4. Emission values obtained by proportional samples and chart reading are in good agreement for CO, but HC emissions by chart reading are generally lower than sampler bag values.

Supplementary road tests performed at three vehicle loads (zero, half, and full load) in single trucks in each weight group demonstrated

that load had little or no significant effect on emissions or vehicle parameters in the lighter trucks, and mostly scattered and inconsistent effects in the heavier trucks. A notable exception was the tendency for air consumption to increase progressively with load in the two heaviest weight groups.

III. TEST CONDITIONS AND EQUIPMENT

Trucks

Ten trucks in each of four weight groups were selected by the A. M. A. Heavy Vehicle Panel as being most representative of those on the road. Following the initial series of road tests, trucks in the lightest weight group (Group I--trucks less than 6,000 lb GVW) were deleted from the test program. The weight groups retained to the completion of the program were as follows:

Group II	6,000 to 10,000 lb GVW
Group III	10,000 to 19,500 lb GVW
Group IV	Over 19,500 lb GVW

Mechanical details of the Group II, III and IV trucks are shown in Table III-1.

Median Trucks

One truck in each weight group was selected on the basis of physical characteristics as being most representative of that group. The median truck in Group I was Dodge No. 1. Median trucks in the other three weight groups are indicated in Table III-1.

Truck Loading

Except for supplementary "load-effect" tests at no load and full load with the median trucks (see Section IX for a discussion of these tests), all road tests were conducted at 50% load--i.e., one-half of the difference between GVW and unloaded weight.

Truck Preparation

As part of the mechanical preparation for test, trucks were inspected and adjusted as follows:

1. Empty truck weighed (Figure III-1) and sufficient load added to bring truck up to desired test weight. Loads were comprised of combinations of 1-ton lead pigs, 525-lb water drums, and 50-lb iron blocks.

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1. Empty truck weighed (Figure III-1) and sufficient load added to bring truck up to desired test weight. Loads were comprised of combinations of 1-ton lead pigs, 525-lb water drums, and 50-lb iron blocks.

Figure III-1. Empty truck is weighed before test equipment and load are installed.

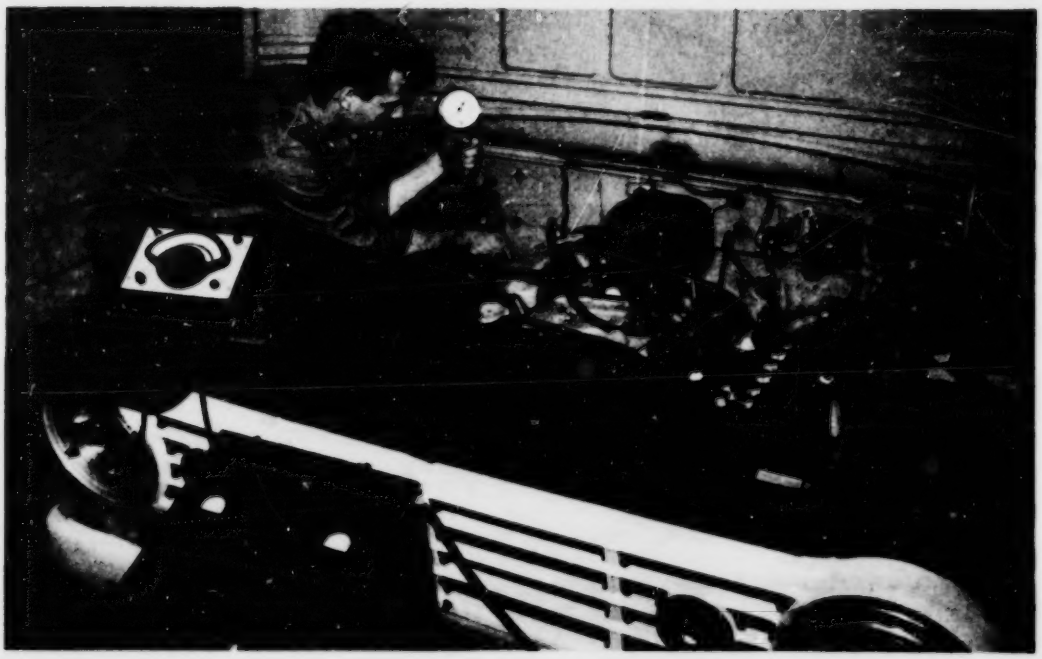


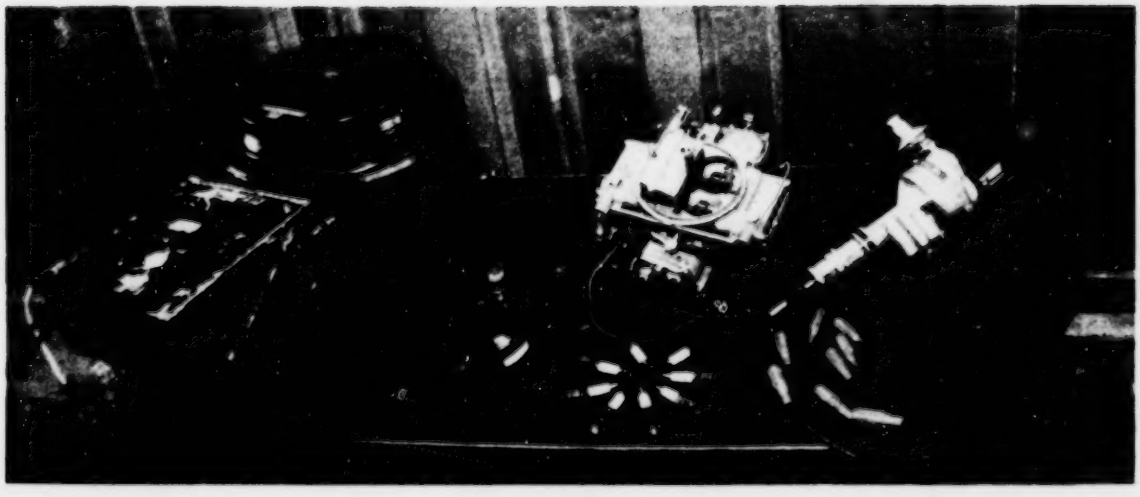
Figure III-2. Compression check. Cranking-voltage power supply unit at front of truck controls cranking speed to 200 rpm.

2. Compression pressures measured and recorded (Figure III-2). The desired maximum pressure variation between cylinders was 20 psi.
3. Calibrated distributor and flowed carburetor installed (Figure III-3). These parts were used instead of the "as-received" carburetors and distributors because of the uncertainty of retrieving the same trucks later in the program for dynamometer tests following the initial series of road tests--i. e., the effect of truck substitution would be minimized by the use of master carburetors and distributors.
4. New spark plugs and ignition harness installed.
5. Exhaust heat-control valve checked for free operation.
6. Basic ignition timing adjusted to manufacturer's specifications.
7. Idle mixture adjusted to give highest smooth-idle engine rpm, and idle speed set to manufacturer's specifications.
8. Curve of zero torque (manifold vacuum at the engine power required to drive the unloaded rear wheels) established across the engine speed range.
9. Exhaust system checked for leaks and repaired if necessary.
10. Pace proportional sampler and associated equipment--power inverter, sample probe, water traps, and carburetor laminar flow element--installed. Details of the samplers and sample train are given in Appendix A.

Vehicle Mode Recorder

Vehicle modes of operation were recorded by the Ethyl-designed Speed-Load-Acceleration-Variables-Encoder (hereafter SLAVE). For this test program, the instrument was modified to record (at one-second intervals) any one of 27 possible 1-inch Hg steps of intake manifold vacuum, 100 possible 40-rpm steps of engine speed, 9 possible gear positions including neutral, and the occurrence of closed throttle. Additional details of SLAVE operation are given in Appendix A.

Figure III-3. Some of the flowed carburetors and calibrated distributors used with the various trucks (left). Modified air cleaner (below) is fitted with laminar flow element housing. New spark plugs and ignition harness were installed for each test.



Exhaust Gas Sampling

Proportional samplers, built by Pace Engineering Company and designed to collect a representative exhaust gas sample in a plastic bag, were used in the road and chassis dynamometer tests (Figure III-4). A minimum of two acceptable replicate runs was made for each type of test (road or chassis dynamometer) in each truck. In addition, replicate California cycle tests were made on at least one-half of the trucks in Groups II, III and IV using the procedures and equipment outlined in "California Test Procedure and Criteria for Motor Vehicle Exhaust Emission Control," Part IV.

Exhaust Gas Analyses

Gross hydrocarbons by IR and FID, CO and CO_2 by IR, O_2 by polarograph, NOx by modified Saltzman, and subtractive column data for total paraffins, olefins, and aromatics (except benzene) by FID were measured for all bag exhaust samples. Details of analytical equipment are given in Appendix A.

SLAVE Data Processing

Punched tape SLAVE data were processed in a special computer program to provide outputs of all possible combinations of:

1. Four power modes--
   a. Full power, or manifold vacuum equal to or less than that required for power-jet operation.
   b. Part power, or engine speed and vacuum conditions greater than for full power but less than that for zero torque conditions.
   c. Driven power, or engine speed and vacuum conditions greater than for part power but less than for closed throttle.
   d. Closed throttle, or the specific conditions when the throttle is closed.
2. Six engine speed brackets--0 to 600 rpm, 600 to 1200, 1200 to 1800, 1800 to 2400, 2400 to 3000, and 3000 to 3960 rpm.

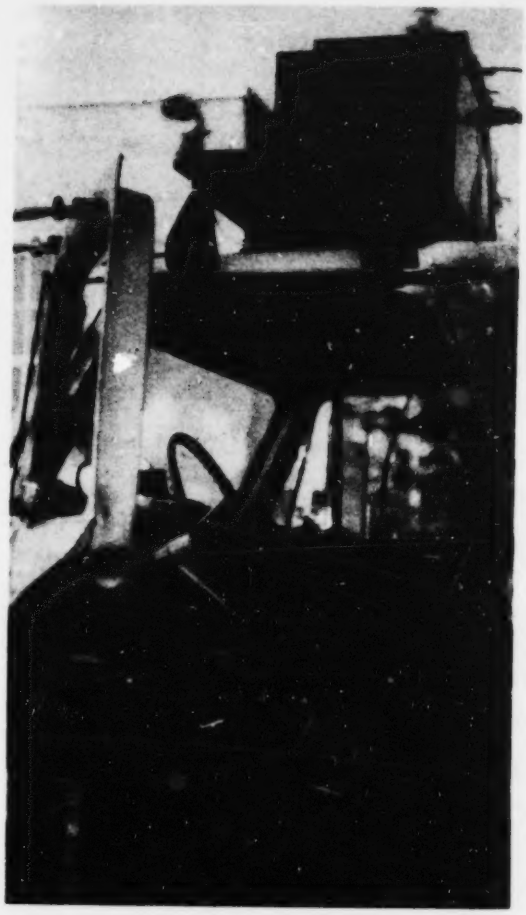


Figure III-4. Truck equipped for road test. Sampler control unit is on seat alongside driver (left), bag tank is mounted on cab roof (below).

3. Four major modes of vehicle operation--idle, cruise, acceleration and deceleration.

Appendix A gives additional details of SLAVE mode-data processing.

Chassis Dynamometer Equipment and Operation

The chassis dynamometer work was conducted in Ethyl's C-16 chassis dynamometer "hot room" (Figure III-5). This installation consists of 48-in.-diameter wheel rolls connected through a chain drive to a grid-loaded 150 hp direct-current electric dynamometer. An inertia-disc and fan-loading system is coupled to the rolls through a belt drive. The basic system provides a maximum inertia load equivalent to a vehicle weight of 5650 lb. A supplemental inertia-loading system, consisting of a motor-driven flywheel coupled electrically through Ward-Leonard controls to the dynamometer, provides additional inertia loading up to a maximum of about 27,000 lb equivalent vehicle weight. In this latter configuration, the dynamometer grid load is removed and the dynamometer acts as a generator to drive the supplemental motor-flywheel inertia load. Figures III-6 and III-7 show some of the trucks and test equipment being operated on the chassis dynamometer.

As used in the truck program, the system configuration consisted of full inertia-disc and fan loads coupled to the rolls at all times, plus sufficient supplemental motor-flywheel inertia load to provide truck acceleration times equal to level-road accelerations (road acceleration times were determined experimentally with the trucks loaded to the test weight). This loading configuration was applied to the trucks during accelerations from idle through the gears. At the end of the acceleration through the gears, the dynamometer was switched from "inertia" configuration to the pre-set "cruise" loading through the grid network. This dynamometer loading was then used for the rest of the test cycle. At the end of a cycle, the dynamometer was again "inertia" loaded, and the cycle repeated the required number of times.

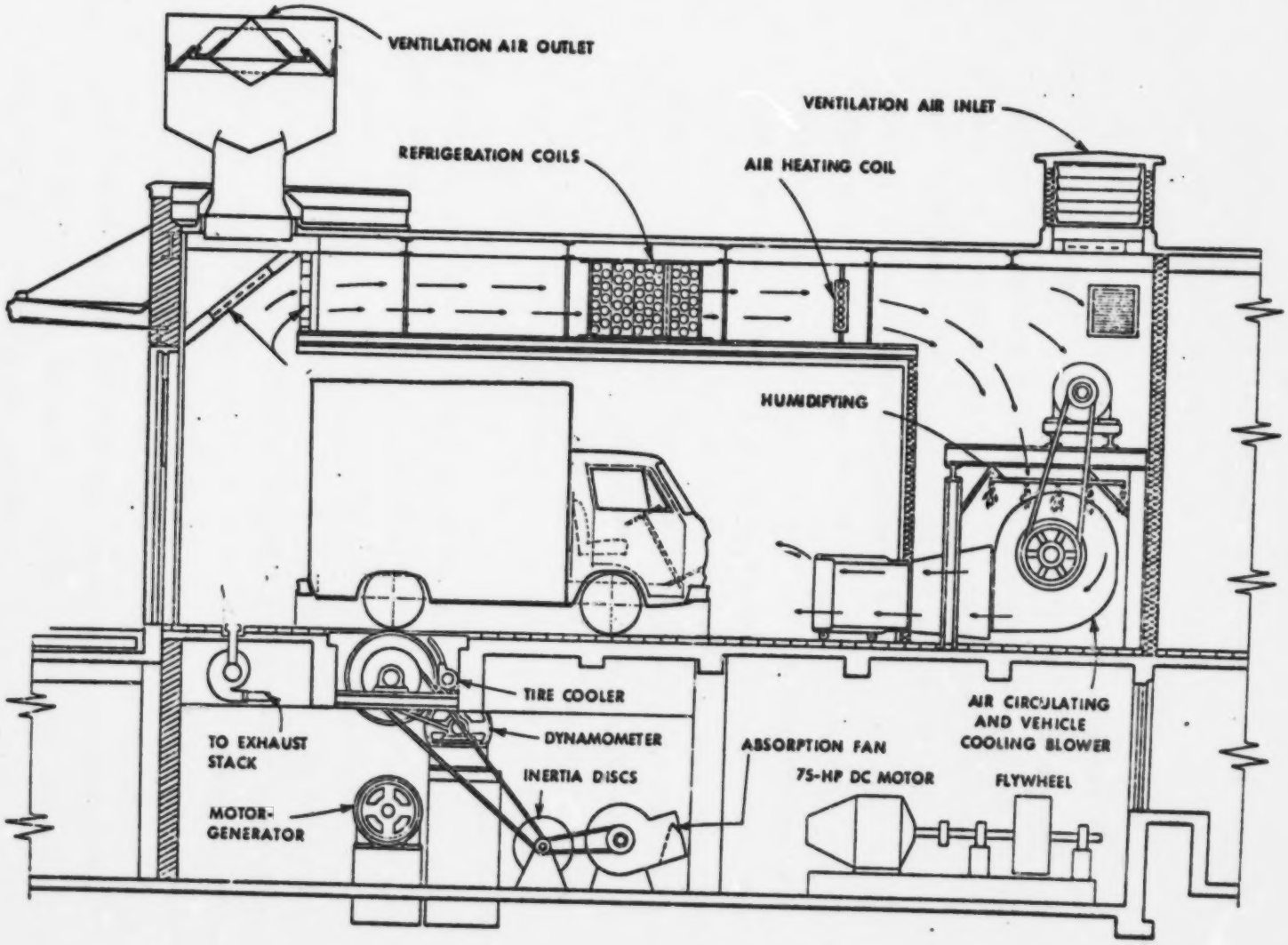


Figure III-5. Layout of chassis dynamometer facilities. Supplemental motor-flywheel inertia system is at lower right.

Although the system just described provided for good flexibility and ease of adjustment (particularly of inertia load), two limitations became apparent. The maximum inertia load of 27,000 lb equivalent vehicle weight was insufficient to handle three of the Group IV trucks (Fords-2 and 3, and IHC-3) with gross test weights ranging from 29,000 to 34,000 pounds. As a result, through-the-gears acceleration times for these trucks were fast by 23% to 42%. In addition, it is believed (but undocumented except for two observations) that the dynamometer "cruise" loads applied after the through-the-gears operation generally resulted in lighter acceleration loads than those imposed by the inertia system during the initial acceleration from idle. If such is the case, accelerations following cruise modes likely were on the fast side. In the two cases that were observed (Group II Ford-3 and Group III GMC-1), full-throttle acceleration times with cruise loads were 18% and 16.5% faster than those obtained using the inertia loads set up for through-the-gears accelerations.

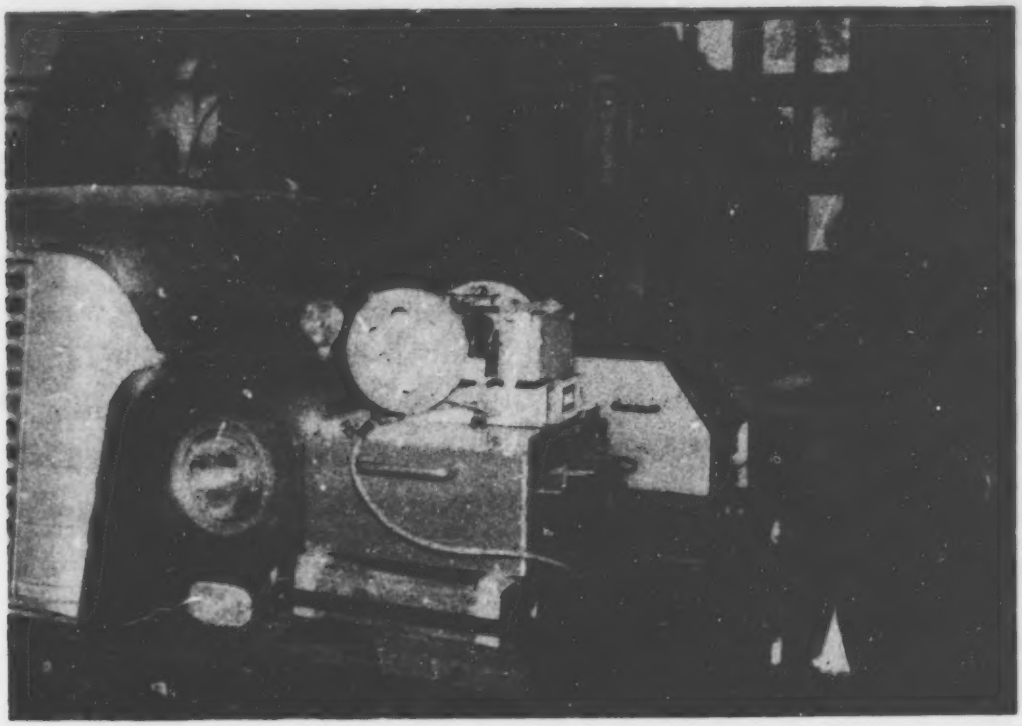


Figure III-6. Pace sampler being readied for dynamometer test. SLAVE mode recorder is in foreground at front of truck.

Figure III-7. Truck undergoing California-cycle test. Pace sampler is on floor at side of truck. "Sample prep" cart at rear connects tailpipe probe to analyzer console and strip-chart recorders.

Table III-1

SUMMARY OF VEHICLE SPECIFICATIONS

Make	No.	Year Model	Model	Body Type	Weight, lb GVW/Test	Engine	Odom.	Trans.	Axle* Ratio	Tire Size	N/V#	Owner	1967 Lic. No.
					(Group II)								
Chev.	1	1966	C-20	Pickup	7500/5950	250 I-6	13,370	3	4.57	7.50 x 16	56.0	Mart'l	7670CM
Chev.	2	1966	C-20/30	Pickup	7500/6050	292 I-6	8,350	4	5.14	8.00 x 19.5	54.0	Chev.	16M370
Chev.**	3	1966	C-20/30	Pickup	7500/5900	283 V-8	16,900	3	4.11†	7.75 x 15	50.0	Harg'v	345D93
Chev.	4	1966	C-30	Van	10,000/8200	250 I-6	21,160	4	5.14	7.50 x 16	57.3	Whit	4410DZ
Dodge	1	1967	D-200	Pickup	7500/5950	318 V-8	12,200	4	4.10	6.50 x 16	51.0	Tyr'l	7111CZ
Ford	1	1966	F-250	Pickup	7500/6100	240 I-6	14,600	3	4.56	6.50 x 16	57.2	Hertz	7686CF
Ford	2	1967	F-250	Pickup	7500/5700	300 I-6	5,460	3	4.88	8.00 x 16.5	58.8	Ford	15M787
Ford	3	1965	F-350	Stake	10,000/7560	352 V-8	40,000	4	5.16†	8.00 x 17.5	60.0	Ashm'r	7034CN
GMC	1(M)	1964	1502	Pickup	7500/6050	305 V-6	47,100	3	4.10	7.00 x 15	48.7	GMC	5239CK
IHC	1	1965	D-1000	Sta.Wag.	7300/5500	266 V-8	25,500	3-O.D.	4.09	8.45 x 15	51.8	Chap'n	MF8835
					(Group III)								
Chev.	1	1967	C-50	Stake	16,000/11,200	250 I-6	2,100	4	6.17	8.25 x 20	57.4	Chev.	16M851
Chev.	2	1966	C-6503	Stake	19,500/13,725	292 I-6	4,380	4	6.40	8.25 x 20	59.4	Chev.	16M400
Chev.	3	1965	C-60	Van	19,500/14,325	292 I-6	28,750	4	7.20	8.25 x 20	67.9	Whit	4405DZ
Chev.	4	1965	C-60	Van	19,500/14,400	292 I-6	40,700	4	6.17	8.25 x 20	57.8	Whit	4407DZ
Ford	1	1965	F-500	Stake	18,000/12,375	240 I-6	21,300	4	6.20	8.25 x 20	55.8	Ford	15M785
Ford	2	1966	F-600	Van	20,000/15,750	330 V-8	28,750	4	6.20	8.25 x 20	57.7	Ashm'r	7052CN
Ford	3(M)	1967	F-600	Stake	20,000/15,300	330 V-8	2,780	5	6.20	8.25 x 20	56.7	Ford	15M618
Ford	4	1965	F-700	Van	20,000/15,725	330 V-8	36,600	5	6.50	9.00 x 20	56.0	E and L	5205CD
GMC	1	1965	V-4011	Van	19,500/15,560	305 V-6	39,100	4	6.50	9.00 x 20	56.4	E and L	5220CD
IHC##	1	1964	LS-1600	Van	19,000/14,500	304 V-8	35,100	5	5.83	9.00 x 20	54.0	Hertz	7612CF
					(Group IV)								
Chev.	1(M)	1966	C-60H	Stake	30,000/19,000	366 V-8	2,650	5	7.20	9.00 x 20	62.7	Chev.	16M797
Chev.	2	1966	C-80	Trac.	32,000/25,000	366 V-8	12,350	5	7.20	10.00 x 20	60.8	Chev.	4267CK
Dodge††	1	1966	D-700	Trac.	25,000/23,000	361 V-8	34,300	5	7.17	10.00 x 20	60.6	Chrys.	9668CD
Ford	1	1966	F-750	Stake	25,500/18,250	361 V-8	5,050	5	7.20	11.00 x 22.5	61.0	Ford	15M791
Ford	2	1966	C-800	Trac.	50,000/34,000	391 V-8	35,100	5	6.50	11.00 x 22.5	56.7	Ford	12M917
Ford	3	1966	T-850	Dump	43,000/29,000	477 V-8	35,150	5	7.17	10.00 x 20	60.0	Ford	15M673
GMC	1	1964	BA-4005	Trac.	26,000/22,000	351 V-6	130,000	5	6.17†	9.00 x 20	54.0	GMC	263D29
IHC	1	1962	1700	Stake	21,000/14,425	304 V-8	40,500	4-O.D.	6.14	9.00 x 20	55.2	Shrv's	900-203
IHC	2	1966	1700	Stake	24,000/17,600	345 V-8	10,750	5	6.66	9.00 x 20	56.2	Hertz	7676-CF
IHC	3	1965	R-190	Trac.	50,000/34,000	450 I-6	34,800	4-O.D.	5.57	10.00 x 20	46.3	E and L	5223-CD

*High axle ratio shown if two-speed axle
#Engine RPM/MPH determined experimentally
†Calculated from speed-tire size relations
**Original vehicle used for SLAVE tests had four-speed transmission
##Original vehicle used for SLAVE tests was a dump truck with four-speed transmission
††Original vehicle used for SLAVE tests was Dodge D-600 stake truck, 24,000 GVW
(M)Median truck in weight class

IV. DEVELOPMENT OF THEORETICAL MODE CYCLES

The following outline shows the procedure used to develop the theoretical mode cycles:

1. All tests were made in replicate.
2. Road routes were developed using the "median" truck in each weight group. Route selection was adjusted to closely simulate Los Angeles truck data (Contract No. PH 86-62-12) for each weight group. Details of route development are given in Appendix A.
3. Remaining trucks in each weight group were run on the appropriate developed road route with vehicle modes of operation recorded by the SLAVE instrument.
4. Road-route mode data for all vehicles in a given weight group were averaged to give a cross-section of the modes of operation of the trucks in each group.
5. Averaged mode data for all trucks in a given weight group were analyzed to provide a basis for the development of four mode cycles in the following manner:
   a. Divide average duration in IDL by percent time in neutral to obtain estimated standing IDL duration. The purpose of this step is to estimate the average duration in IDL if all IDL time were in standing IDL.
   b. Divide item (a) by percent duration in IDL to give average seconds from standing IDL to standing IDL.
   c. List the total percent changes from IDL to CRU, ACC, and DEC. Do likewise for the total percent changes from CRU, from ACC, and from DEC.
   d. Determine the total number of changes in all the major categories from standing IDL to standing IDL by dividing the total percent changes from IDL into 100.
   e. Determine the total changes in each major category to all other categories by multiplying the total changes obtained in item (d) by the total percent changes in each major category.
   f. In the table for the percent changes from major category to category, note the distribution of the values and allot the changes from each major category to other categories in accordance with this distribution.

Results from the execution of the above procedure are shown in Table IV-1 for the trucks in the four weight groups.

6. From the data in Table IV-1, theoretical mode cycles were developed in the following manner:

a. List the major categories for the developed mode cycle from standing IDL to standing IDL in such a way that the total changes in the cycle and the changes from major category to category correspond with calculations made in items 5a to 5f. In this listing, start with IDL and proceed to the major categories needed to make a gear shift. Then proceed to listing the remaining items.

b. For each of the listed major categories, select a highly representative subcategory item in the computer printout table. During gear operation, refer to the table of percent time in gears for an appropriate subcategory. For the remaining major categories, select the subcategories listed in the table that represent a large fraction of the total time during the road operation.

c. Prepare a table of selected major categories and list beside each the speed and vacuum ranges, the gear ratio, and duration of each operation as indicated in the subcategory table.

d. From the duration in each operation, determine the percent time in the four basic categories of IDL, CRU, ACC, and DEC. Compare these values with that given by the computer printout for the road SLAVE data. If necessary, adjust the CRU time in the developed mode cycle so as to make the percentages in the cycle agree with the road values. If agreement cannot be obtained by this operation alone, it may be necessary to select other subcategories for ACC and/or DEC in order to get agreement. (Usually, however, this was not found to be necessary.) This now completes the theoretical mode cycle development work, and the cycle should correspond with the basic mode factors outlined in the computer printout of the road SLAVE data.

Tables IV-2 through IV-5 list the specific theoretical mode-cycle operating conditions for the four weight groups based on the procedures outlined in steps 5 and 6. Since the Group I trucks were deleted from the program shortly after this stage of cycle development, no additional cycle work was conducted with the Group I trucks.

Table IV-1

ANALYSIS OF SLAVE DATA FROM ROAD RUNS

Average of Basic Data From All Trucks in a Weight Group

SLAVE Mode	Truck Weight Group I	II	III	IV
Percent of IDL time in neutral	76	78	81	84
Average duration in IDL, sec.	13.90	13.71	14.75	22.47
Estimated duration of standing IDL, sec.	18.30	17.58	18.20	26.70
Percent duration in IDL	18.02	17.97	17.62	14.59
Time from IDL to IDL, sec.	102	98	103	183
Total percent changes from IDL	7.88	8.22	7.92	6.75
Total percent changes from CRU	14.99	7.43	16.07	20.15
Total percent changes from ACC	36.39	41.49	34.16	33.41
Total percent changes from DEC	40.40	42.90	40.14	38.91
Total changes from IDL to IDL (Rounded)	13	12-13	13	15
Change from CRU per IDL change (Rounded)	2	1	2	3
Change from ACC per IDL change (Rounded)	5	5	5	5
Change from DEC per IDL change (Rounded)	5	5	5	6
Total changes (+1 for IDL)	13	12	13	15
Percent changes & (No. changes between Idles, Rounded)				
IDL to CRU	0	0	0	0
IDL to ACC	7.88 (1)	7.98 (1)	7.92 (1)	6.75 (1)
IDL to DEC	0	0	0	0
CRU to IDL	0	0	0	0
CRU to ACC	4.37 (1)	2.59 (1/2)	5.15 (1)	6.16 (1)
CRU to DEC	9.88 (1)	4.74 (1/2)	10.92 (1)	13.99 (3)
ACC to IDL	0	0	0	0
ACC to CRU	5.86 (1)	3.33 (1/2)	5.30 (1)	8.61 (1-1/2)
ACC to DEC	30.10 (4)	37.94 (4)	28.86 (4)	24.80 (3-1/2)
DEC to IDL	7.49 (1)	8.24 (1)	7.65 (1)	7.05 (1)
DEC to CRU	8.95 (1)	4.00 (1/2)	10.69 (1)	11.39 (1)
DEC to ACC	23.96 (3)	30.66 (5)	21.80 (3)	20.47 (3)
Total changes (Rounded)	(13)	(13)	(13)	(15)

Table IV-2

THEORETICAL MODE CYCLE DERIVED FROM SLAVE DATA GROUP I TRUCKS

Based on Average Road Data From All Trucks in Weight Group

Subcategory No.	Category	Speed Range, rpm Start	Speed Range, rpm End	Vacuum Range, in. Hg Start	Vacuum Range, in. Hg Interim	Vacuum Range, in. Hg End	Gear	Duration, sec.
1	IDL		500-650		18.5-20		N	20
143	ACC	500	1500	19	13	13	1	4
504	DEC	1500	850	15	21	4	1	2
223	ACC	850	1500	19	13	13	2	4
504	DEC	1500	1000	15	21	4	2	2
215	ACC	1000	1500	13	12	15	3	5
39	CRU		1500		14		3	20
503	DEC	1500	950	14	19	13	3	5
22	CRU		950		16		3	20
199	ACC	950	1100	14	10	15	3	4
471	DEC	1100	850	15	9	13	3	3
199	ACC	850	1150	14	10	15	3	5
481	DEC to IDL	1150	700	22	22	22	3	5
							Total	99

Table IV-3

THEORETICAL MODE CYCLE DERIVED FROM SLAVE DATA GROUP II TRUCKS

Based on Average Road Data From All Trucks in Weight Group

Subcategory No.	Category	Speed Range, rpm Start	Speed Range, rpm End	Vacuum Range, in. Hg Start	Vacuum Range, in. Hg Interim	Vacuum Range, in. Hg End	Gear	Duration, sec.
1	IDL	550-700		18-21			N	24.0
159	ACC	550	2100	18	10	14	1	5.5
568	DEC	2100	1400	14	22	23	1	2.0
295	ACC	1400	2100	13	5	16	2	5.5
568	DEC	2100	1400	14	22	23	2	2.0
279	ACC	1350	1700	13	5	15	3	5.5
519	DEC	1700	1400	14	23	14	3	5.0
281	ACC	1400	1600	14	7	23	3	4.5
503	DEC	1600	1000	14	22	13	3	5.0
215	ACC	1000	1400	13	6	14	3	6.0
39	CRU	1400		16	16	16	3	22.0
505	DEC	1400	900	15	22	21	3	8.0
223	ACC	900	1400	21	14	13	3	5.0
513	DEC	1400	700	23	23	22	3	8.0
							Total	98.0

Table IV-4

THEORETICAL MODE CYCLE DERIVED FROM SLAVE DATA GROUP III TRUCKS

Based on Average Road Data From All Trucks in Weight Group

Subcategory No.	Category	Speed Range, rpm Start	Speed Range, rpm End	Vacuum Range, in. Hg Start	Vacuum Range, in. Hg Interim	Vacuum Range, in. Hg End	Gear	Duration, sec.
1	IDL	550-650		CT*	CT*	CT*	N	15.0
159	ACC	600	2400	CT*	7	15	2	6.0
552,553,559,639	DEC	2100	1400	16	20	19	2	2.0
290	ACC	1200	2300	5	3	6	3	6.0
628	DEC	2300	1400	5	23	23	3	2.0
159	ACC	600	2200	CT*	6	14	3	5.5
568	DEC	2100	1450	14	23	22	3	2.0
290	ACC	1300	2000	3	3	3	4	6.5
566	DEC	2200	1500	14	23	3	4	2.0
290	ACC	1600	2000	3	3	3	5	6.0
567	DEC	2100	1400	14	20	11	5	5.0
41	CRU	1400			12		5	15.0
295	ACC	1400	1850	11	8	11	5	6.0
57	CRU	1850		12	13	23	5	15.0
561	DEC	1850	700	22	22	22	5	12.0
							Total	106.0

*Closed Throttle

Table IV-5

THEORETICAL MODE CYCLE DERIVED FROM SLAVE DATA GROUP IV TRUCKS

Based on Average Road Data From All Trucks in Weight Group

Subcategory No.	Category	Speed Range, rpm Start	Speed Range, rpm End	Vacuum Range, in. Hg Start	Vacuum Range, in. Hg Interim	Vacuum Range, in. Hg End	Gear	Duration, sec.
1	IDL	500-600		18-20			N	25
175	ACC	500	2500	19	8	12	2	8
630	DEC	2500	1400	13	22	22	2	3
314	ACC	1400	2500	22	3	3	3	9
632	DEC	2500	1450	10	23	23	3	3
175	ACC	1500	2500	19	8	12	3	8
630	DEC	2500	1450	12	22	2	3	3
315	ACC	1450	2500	24	4	7	4	8
628	DEC	2500	1400	4	24	24	4	5
297	ACC	1400	2100	12	16	23	5	10
305	DEC	2100	1350	24	24	24	5	10
41	CRU	1350		12	11	23	5	25
279	ACC	1350	1550	11	11	11	5	7
39	CRU	1550		11	12	13	5	25
519	DEC	1550	1300	12	16	11	5	8
40	CRU	1300		12	14	21	5	25
505	DEC	1300	700	16	22	22	5	11
							Total	193

V. DEVELOPMENT OF CHASSIS DYNAMOMETER MODE CYCLES

Development of finished chassis dynamometer mode cycles for each of the three weight groups was carried out in three major steps:

1. Using the theoretical mode cycle for a weight group as a model (Section IV, Tables IV-3, IV-4, or IV-5), a trial chassis cycle was written to conform to the characteristics of the median truck. Important practical considerations that had to be dealt with in setting up the trial cycle included rpm-mph relations, inertia loading, and driveability. For example, Table IV-4 showing the theoretical cycle for the Group III trucks indicates a terminal speed of 2400 rpm in second gear and a starting speed of 1200 rpm in third gear. The rpm-mph relations shown in Figure V-1 for the median truck indicate that a shift sequence meeting these rpm conditions could be made only if there was no decrease in vehicle speed during the shift from second to third gear--a situation that is unlikely to occur on the level road. In such cases, the problem was usually resolved by adjusting terminal rpm upward or the following starting rpm downward to accommodate the gear spacing of the truck. (For the Group III median truck used as an example, the terminal speed in second gear was left at 2400 rpm, and the starting speed in third gear was reduced to 1100 rpm.) Chassis dynamometer inertia loads were set to provide acceleration rates equal to level-road accelerations. Although this procedure usually resulted in some departure from the theoretical-cycle acceleration rates, it was felt to be more realistic in terms of actual vehicle performance.

2. Following the construction of the trial cycle for the median truck, the truck was operated on the chassis dynamometer to provide cycle results that could be compared directly with those obtained from road runs. The major criteria used for evaluating the relative suitability of the cycle were HC and CO emission levels, air consumption, and average speed. Where indicated, minor modifications were made

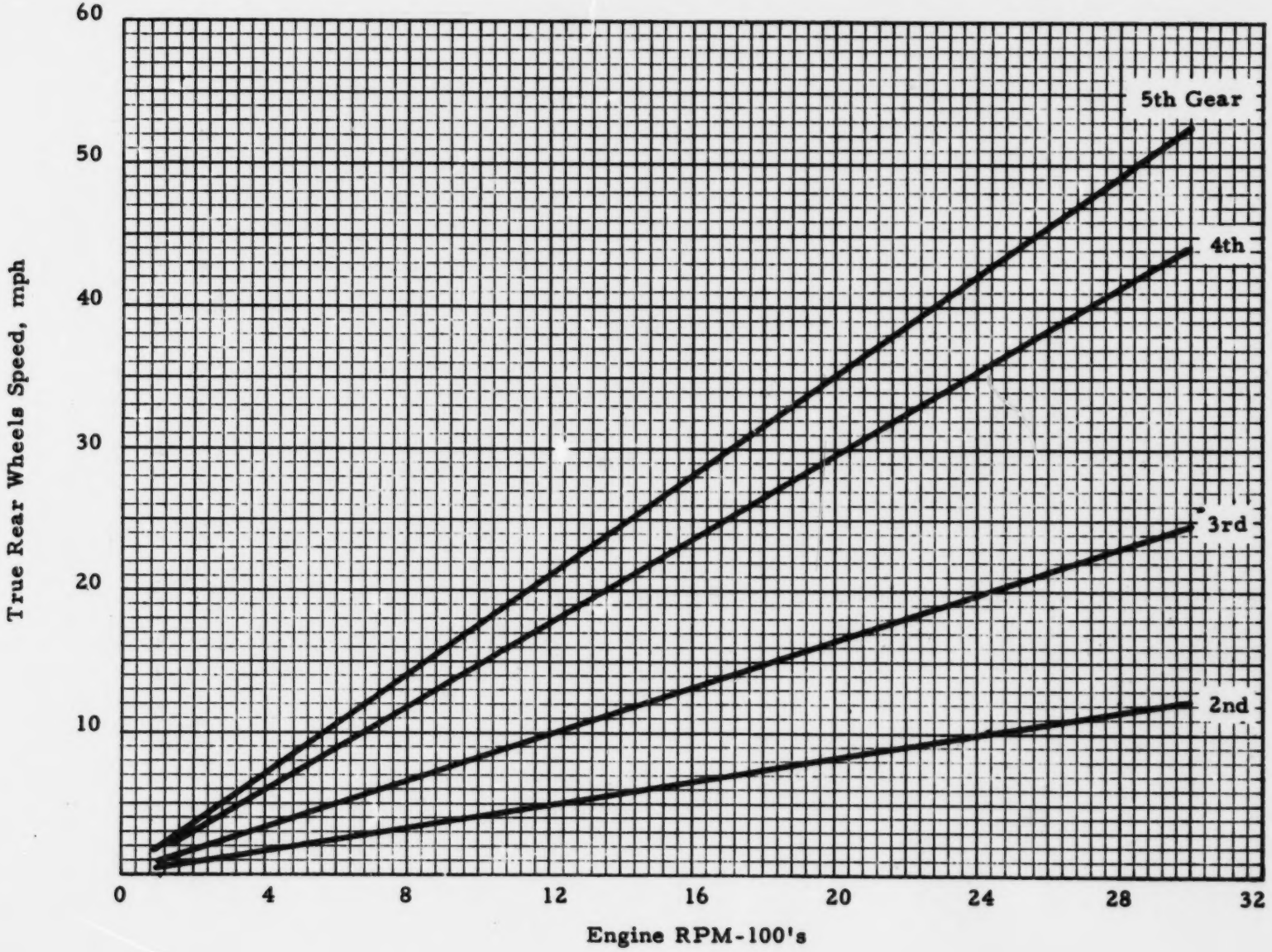


Figure V-1. Speed-rpm relations for Group III Ford-3 median truck.

in idle duration, shift or cruise speeds, or engine loads in efforts to manipulate cycle results to approach road results. Additional trial cycles were then constructed, run, and modified until the level of agreement between cycle and road results was judged to be satisfactory. The median-truck cycles finally evolved from the procedure are shown in Tables V-1, V-2, and V-3. These cycles were used to obtain the median-truck emission and mode data shown in this report.

3. Adaptation of the median-truck cycle to a universal "final" cycle, applicable to all trucks in a weight group, became the next order of business. Early in this part of the program, it became apparent that major relaxations of certain median-truck cycle specifications would have to be allowed to make the final cycle applicable to a wide range of power-to-weight ratios, gear ratios, and transmission types--particularly in the Group IV trucks. In attempting to write final cycles that would provide the desired flexibility while deviating as little as possible from the median-truck operation, the following guidelines were used:

a. Dynamometer inertia loading that would give cycle accelerations equal to those on the level road (with truck loaded to 50% load) would continue to be used.

b. Engine rpm instead of vehicle speed would be used to specify shift points through the gears. This approach seemed reasonable since, in general, shift points on the road runs were defined by rpm.

c. Once in top gear, the terminal acceleration speed in that gear, as well as all subsequent mode speeds, would be specified in terms of vehicle mph. Such an approach not only matched the road procedure for operating in top gear, but also obviated the need to "drive by tachometer" over the major portion of the cycle--a tedious procedure in the judgement of the test drivers.

d. Dynamometer settings for cruise load would be in terms of rear-wheel horsepower absorbed, and equal to the measured

rear-wheel horsepower of the median truck at the cruise manifold vacuums specified for that truck. Although it was originally planned to specify cruise loads in terms of manifold vacuum, discussions between Ethyl and PHS personnel on May 5, 1967 led to the suggestion by PHS to use "horsepower" settings for cruise loads. This suggestion was based on the argument that horsepower was the more representative criterion for approximating cruise operation on the road--i.e., that within each weight group, the horsepower required to maintain a given speed was about the same for all trucks. Although subsequent dynamometer test work demonstrated that the final cycle incorporating the "horsepower" cruise settings did, in general, result in emission and air-consumption values that were in good agreement with the road data, two rather significant exceptions were found in Group IV trucks. The two trucks--IHC-1 and IHC-2--had relatively small engines and were at the low end of the weight group in terms of GVW and test weight. As a result, the cruise vacuums of the two trucks at the "horsepower" cruise settings were considerably lower than those of the median truck. When operated on the chassis dynamometer according to the final cycle (Section VI, Tables VI-4 and VI-5), average air consumption for IHC-1 was 23.5% higher than on the road, and for the IHC-2 it was 29.6% higher. Follow-up exploratory tests with the two trucks operated on the same cycle but with cruise loads set to equal the manifold vacuums of the median truck gave air consumption values that were 1.5% lower and 11.8% higher than road values, respectively. Cycle HC and CO concentrations were essentially the same--within 9% or less--regardless of whether "horsepower" or "vacuum" cruise settings were used. The implication here is that air consumption will be abnormally high in the lighter trucks when they are forced to operate on the cycle at cruise vacuums considerably lower than those of the median truck.

With guidelines established for specifying shift speeds, driving speeds, and cruise loads, it was then possible to write final cycles for each group of trucks. The last obstacle--that of adapting the Group III and IV median-truck cycles to accommodate two transmission types (four-speed and five-speed)--was handled by writing individual cycles for each transmission type in these two weight groups. For the Group II trucks, a single cycle sufficed since only the three top gears are specified regardless of number of transmission forward speeds. In adapting the five-speed-transmission cycle of the Group III and Group IV median trucks to the four-speed situation, some experimentation with shift speeds was required in the first two or three trucks tested to optimize emission and air consumption values. The shift speeds finally agreed upon and shown in the finished cycles were judged to be the best in these respects. These same shift speeds were then followed when testing the remaining four-speed trucks in Group III and IV.

Section VI describes some of the details of driving the cycles and also discusses some of the problems encountered in the course of operating the trucks on the chassis cycles. Tables VI-1 through VI-5 in Section VI show the final cycles as they are currently recommended.

Table V-1

CHASSIS DYNAMOMETER CYCLE FOR
GROUP II MEDIAN TRUCK - 1964 GMC 1502

Repeat for a Total of Four Cycles

Mode	Man. Vac., in. Hg	Rear-wheels Speed, mph	Engine RPM	Duration, sec.
1. Idle	(a)	0	(b)	22
2. Gear-1	6	0-16	Idle-2300	6
3. Gear-2	WOT	15-27	1250-2200	5
4. Gear-3	6	26-32	1250-1550	8
5. Decel	Closed Throttle	32-27	1550-1300	6
6. Accel	WOT	27-32	1300-1550	5
7. Decel	Closed Throttle	32-20	1550-950	5
8. Accel	6	20-29	950-1400	6
9. Cruise	16*	29	1400	22
10. Decel	Closed Throttle	29-19	1400-900	9
11. Accel	8	19-29	900-1400	5
12. Decel	Closed Throttle	29-0	1400-Idle†	15

(a) Not specified--idle mixture adjusted to give highest smooth-idle rpm

(b) Manufacturer's specifications

* Corresponds to 13.9 rear-wheel hp

† Declutch at 10-12 mph and start timer for next idle mode

Table V-2

CHASSIS DYNAMOMETER CYCLE FOR
GROUP III MEDIAN TRUCK - 1967 FORD F-600

Repeat for a Total of Four Cycles

Mode	Man. Vac., in. Hg	Rear-wheels Speed, mph	Engine RPM	Duration, sec.
1. Idle	(a)	0	(b)	20
2. Gear-2	WOT	0-10	Idle-2400	3
3. Gear-3	WOT-7*	9-21	1100-2600	10
4. Gear-4	WOT	20-26	1400-2000	6
5. Gear-5	WOT	24-35	1400-2100	12
6. Decel	Closed Throttle	35-25	2100-1400	10
7. Cruise	12.5†	25	1400	12
8. Accel	7	25-28	1400-1600	6
9. Cruise	11.5**	28	1600	12
10. Decel	Closed Throttle	28-0	1600-Idle#	15

(a) Not specified--idle mixture adjusted to give highest smooth-idle rpm

(b) Manufacturer's specifications

* Full throttle to 1900 rpm, 7 in. Hg from 1900 to 2600 rpm

† Corresponds to 22.2 rear-wheel hp

** Corresponds to 28.0 rear-wheel hp

\# Declutch at 10-12 mph and start timer for next idle mode

Table V-3

CHASSIS DYNAMOMETER CYCLE FOR
GROUP IV MEDIAN TRUCK - 1966 CHEVROLET C60H

Repeat for a Total of Two Cycles

Mode	Man. Vac., in. Hg	Rear-wheels Speed, mph	Engine RPM	Duration, sec.
1. Idle	(a)	0	(b)	27
2. Gear-2	8	0-12	Idle-3000	9
3. Gear-3	WOT-6*	10-21	1400-3000	9
4. Gear-4	WOT	18-32	1700-2900	9
5. Gear-5	8	28-35	1750-2200	12
6. Decel	Closed Throttle	35-21	2200-1300	13
7. Cruise	13†	21	1300	28
8. Accel	11	21-24	1300-1500	19
9. Cruise	12**	24	1500	28
10. Decel	16	24-21	1500-1300	6
11. Cruise	13†	21	1300	28
12. Decel	Closed Throttle	21-0	1300-Idle#	12

(a) Not specified--idle mixture adjusted to give highest smooth-idle rpm

(b) Manufacturer's specifications

* Full throttle to 2200 rpm, 6 in. Hg from 2200 to 3000 rpm

† Corresponds to 25.2 rear-wheel hp

** Corresponds to 32.9 rear-wheel hp

\# Declutch at 10-12 mph and start timer for next idle mode

VI. MODE-CYCLE TESTING

Prior to running the dynamometer mode cycles, the following preliminary performance investigations and dynamometer adjustments were made:

1. Level-road acceleration times at full throttle (usually a minimum of six in two directions) were determined to serve as a guide for setting dynamometer inertia load. These accelerations were made with the vehicle loaded to the test weight (50 %load as defined in Section III.)

2. With truck installed on chassis rolls, relations between engine rpm and rear-wheel speed were established using a calibrated engine tachometer and a master speedometer calibrated to true speed of dynamometer rolls. These rpm-speed relations were determined for all the transmission gears used in driving the cycle (first or "creeper" gear was omitted in the heavier trucks, as was first gear in Group II trucks fitted with four-speed transmissions, since these gears were not used on the road or the chassis dynamometer tests).

3. With full inertia-disc and fan load applied to the chassis rolls, dynamometer supplemental inertia load (motor-flywheel) was adjusted to provide vehicle acceleration rate equal to average level-road acceleration.

4. Dynamometer cruise loads, in terms of rear-wheel horsepower and equal to those of the median truck in each weight group, were set for the cruise speeds specified in the cycle. These were as follows:

Weight Group	Vehicle Speed, mph	Rear Wheel HP Absorbed
II	29	13.9
III	25	22.2
	28	28.0
IV	21	25.2
	24	32.9

5. The vehicle was operated on the rolls until engine and dynamometer equipment were thoroughly warmed up, and cruise manifold

vacuums were observed and logged. (Warmup was considered complete when engine temperature and cruise dynamometer beam readings became stabilized at maximum values.) Any unusual limitations of truck performance--such as engine governors or unusual gear spacing--that might be expected to affect execution of the dynamometer cycle were noted.

6. Ambient temperatures in the chassis room were adjusted to be reasonably close to those encountered during the summer road tests. Representative values were 55-60°F during the first part of the dynamometer program, and 70-75°F during the latter part. The dynamometer room is equipped with a large speed-tracking blower to simulate the road air blast to the front of the vehicle.

Driving the Cycle -- Group II Trucks

All test trucks in this weight group had either three-speed or four-speed manual transmissions. In those trucks equipped with four-speed transmissions, first gear is normally considered a "creeper" gear, and operation in this gear is not incorporated in the cycle. Table VI-1 shows the final cycle as it was modified from the median-truck cycle to accommodate any manual-transmission truck in the weight group. Although not specified in Table VI-1, the cycle should be readily applicable to trucks with automatic transmissions by specifying manifold vacuums to be used during the through-the-gears accelerations.

Idle Mode

After engine and dynamometer temperatures are stabilized, the cycle begins with a 22-second idle period. Close to the end of the idle mode, the transmission is shifted from neutral to starting gear in preparation for the initial acceleration.

Through the Gears

At the end of the idle mode, the truck is accelerated at 6 in. Hg manifold vacuum in starting gear to 2300 rpm, shifted to the next

higher gear, accelerated at full throttle to 2200 rpm, shifted to direct drive, and accelerated at 6 in. Hg to 32 mph. Corresponding mode times varied appreciably among the test trucks because of variations in power-to-weight ratios and gearing.

Accelerations, Decelerations, and Cruise

Following the initial acceleration through the gears, the balance of the cycle is driven in top (direct) gear. Accelerations in top gear are made at the manifold vacuums specified in the cycle (one full-throttle acceleration and two part-throttle accelerations at 6 in. and 8 in. Hg manifold vacuum); all decelerations are made with the throttle closed, vehicle brakes not applied, and the vehicle slowed by the normal dynamometer load. A single timed cruise of 22 seconds in each cycle is made against a dynamometer load that provides power absorption of 13.9 horsepower at the rear wheels. The final deceleration is normally made without use of vehicle brakes (in practice, mild vehicle braking below 15 mph was permitted for trucks in all weight groups because of the coasting characteristics of the chassis dynamometer). At vehicle speeds of 10-12 mph, the engine is declutched and the timer started for the idle mode of the following cycle. The cycle is then repeated for a total of four cycles.

General Observations

Because of the relatively high performance of the Group II trucks and the number of accelerations and decelerations, the process of driving the cycle can best be described as "lively." All test vehicles accelerated rapidly through the gears and during top-gear accelerations, and careful driver attention was required to hold specified acceleration vacuums while avoiding speed overshoot. However, drivers had no trouble in performing the cycle after two or three practice runs.

Driving the Cycle -- Group III Trucks

Test trucks in this weight group had either four-speed or five-speed manual transmissions. Tables VI-2 and VI-3 show the two

cycles written to accommodate both types of transmissions. Since first gear is normally considered a "creeper" gear, the cycle shift sequence begins with second gear regardless of number of forward speeds. If the vehicle is equipped with a two-speed axle, the higher axle ratio is used. In some five-speed transmissions, fifth gear may be equivalent to overdrive--i.e., the ratio of engine speed to driveshaft speed may be less than 1:1. In such cases, fifth gear is not used and the cycle is driven according to the schedule shown for trucks with four-speed transmissions. The intent here is that "direct" drive (1:1 ratio) be used as the top gear in the cycle.

Idle Mode

Following the usual warmup to stabilize coolant and dynamometer temperatures, the cycle begins with a 20-second idle mode. Close to the end of the idle mode, the transmission is shifted from neutral to second gear in preparation for the first acceleration.

Through the Gears

Shift speeds are dependent on transmission type (four or five forward gears). With a four-speed transmission, all shifts are made at 2100 rpm; with a five-speed transmission, the first shift is at 2400 rpm, the second at 2600 rpm, and the final shift at 2000 rpm. With the exception of the third-gear acceleration, accelerations are made at full throttle. In third gear, the first half of the acceleration (from initial speed to the midway point in engine rpm in that gear) is made at full throttle; the final half of the acceleration to terminal rpm in third gear is made at a manifold vacuum of 7 in. Hg.

Accelerations, Decelerations, and Cruises

Following the initial acceleration through the gears, the balance of the cycle is driven in top (direct) gear. The two decelerations in the cycle are made with the throttle closed, vehicle brakes not applied, and the vehicle slowed by the normal dynamometer load. The

initial deceleration from 35 to 25 mph is followed by a 12-second cruise at 25 mph against a dynamometer load that provides power absorption of 22.2 hp at the rear wheels. This cruise is followed by an acceleration at 7 in. Hg manifold vacuum to 28 mph, and a 12-second cruise at 28 mph and 28.0 rear-wheel hp. A final closed-throttle deceleration to idle completes the cycle. At a vehicle speed of 10-12 mph, the engine is declutched and the timer started for the idle mode of the following cycle. The cycle is then repeated for a total of four cycles.

General Observations

Because of the relatively conservative shift speeds specified in the cycle (2600 rpm or less), it is unlikely that engine governor action will affect the normal execution of the cycle (no governor action at 2600 rpm was observed in any of the ten trucks tested). To accomodate such a possibility, however, it is recommended that shift points be kept 100 rpm below governed speed in any cases where governed speed is equal to or less than the rpm's shown in the cycle.

Similarly, it is expected that the vacuum specified for the 25-28 mph acceleration (7 in. Hg) is sufficiently low to enable any truck in the weight group to reach 28 mph. In the unlikely event that 28 mph cannot be attained at the vacuum specified, the mode vacuum will have to be adjusted downward to provide a reasonable acceleration for the truck in question. Possible guidelines would be to specify an acceleration vacuum at a fixed level below the 25 or 28-mph cruise vacuum, or define acceleration vacuum in terms of time to accelerate from 25 to 28 mph. Such a case is described in the section covering the chassis dynamometer cycle for Group IV trucks.

Drivers reported the Group III cycle as being "easy to drive," and new drivers should have no trouble in holding to the mode conditions specified.

Driving the Cycle - Group IV Trucks

Preliminary remarks concerning vehicle and equipment warmup, transmission type, and idle modes shown earlier for the Group III trucks also apply to Group IV, and are not repeated here. In particular, the comment regarding the exclusion of overdrive should be noted--i.e., if fifth gear is found to be an overdrive ratio, the truck should be driven according to the schedule for four-speed transmissions. Table VI-4 shows the Group-IV driving cycle for trucks with four-speed transmissions; Table VI-5 is for trucks with five-speed transmissions.

Through the Gears

Shift speeds in second and third gears are normally at 3000 rpm regardless of transmission type. For five-speed transmissions, the shift to fifth gear is made at 2900 rpm. Accelerations are made at full throttle or part throttle as specified in the cycle instructions. In the Mode-3 acceleration in third gear, the first half of the acceleration (from initial speed to the midpoint in rpm for that gear) is made at full throttle; the final half of the acceleration to terminal rpm is made at a manifold vacuum of 6 in. Hg.

In a number of the five-speed trucks tested, it was apparent that the normal fourth-gear acceleration to 2900 rpm would take the truck beyond 35 mph (the maximum speed specified in the cycle for fifth gear). To handle such cases, the decision was made to specify the shift to fifth gear at 2900 rpm or 35 mph (whichever is lower), and instructions to that effect were incorporated in the final cycle. The acceleration in fifth gear then becomes a matter of recovering the vehicle speed lost in shifting from fourth to fifth gear at 35 mph.

In two of the trucks tested (IHC-2 and IHC-3), engine governor action limited engine speeds to 2800 rpm or less. In these trucks, the shift points were lowered to 100 rpm below governed speed to avoid governor throttling (resulting in shift points at 2700 rpm for

IHC-2 and 2500 rpm for IHC-3); manifold vacuums were unaltered from cycle specifications. Although the cycle as presently written does not so specify, a provision to deal with governor-limited speeds (i.e., shift at 100 rpm below governed speed) can be incorporated.

Accelerations, Decelerations, and Cruises

As with the Group II and III trucks, the balance of the cycle following the through-the-gears acceleration is driven in top (direct) gear. Two of the decelerations (Mode 4 or 5 and the final deceleration) are made with the throttle closed; the intermediate deceleration (Mode 9 or 10) is a part-throttle deceleration made at 16 in. Hg manifold vacuum.

The single acceleration in top gear (Mode 7 or 8) presented some problems when the basic median-truck cycle was applied to the other nine trucks tested in the weight group. This came about because of the relatively high acceleration manifold vacuum (11 in. Hg) specified for the median truck, which is only 1 in. Hg below the 24-mph cruise vacuum. Early in the chassis dynamometer work, it was found that a number of the trucks had 24-mph cruise vacuums below 11 in. Hg at the "horsepower" cruise settings imposed, thus making an 11 in. Hg acceleration to that speed impossible. Since the decision had already been made to use horsepower as the basis for cruise-load settings, the problem then became one of specifying the 21-24 mph acceleration in terms that would accommodate the wide range of power-to-weight ratios, gearing, and other factors that affect engine loading within the weight group. After careful consideration, the decision was made to specify the 21-24 mph acceleration as follows: "Accelerate at 11 in. Hg manifold vacuum or 1 in. Hg below the 24-mph cruise vacuum, whichever is lower." Mode instructions to this effect are given in footnote (g) for the chassis cycles shown in Tables VI-4 and VI-5. It is recognized that by so specifying this acceleration mode, some trucks may be forced to operate at

manifold vacuums low enough to cause enrichment from the carburetor power jet (one of the test trucks -- IHC-1 -- fell into this category) with an accompanying overall increase in cycle HC and CO emissions. However, in view of the cruise conditions imposed by the cycle, no means of escaping this dilemma is readily apparent.

General Observations

Except for the additional step of observing the 24-mph cruise vacuum and tailoring the 21-24 mph acceleration accordingly, no hardship is anticipated in driving the cycle. Even new drivers to the cycle reported it as being "easy to drive."

Table VI-1

DYNAMOMETER CYCLE FOR GROUP II TRUCKS

Repeat for a Total of Four Cycles

Mode	Man. Vac., in. Hg	Rear-wheels Speed, mph	Engine RPM	Duration, sec.
1. Idle	(a)	0	(b)	22
2. Gear - 1*	6	(c)	Idle-2300	(d)
3. Gear - 2*	WOT	(c)	To 2200	(d)
4. Gear - 3*	6	To 32	(c)	(d)
5. Decel	Closed Throttle	32-27	(c)	(e)
6. Accel	WOT	27-32	(c)	(d)
7. Decel	Closed Throttle	32-20	(c)	(g)
8. Accel	6	20-29	(c)	(g)
9. Cruise	(f)	29	(c)	22
10. Decel	Closed Throttle	29-19	(c)	(g)
11. Accel	8	19-29	(c)	(g)
12. Decel	Closed Throttle	29-0	To Idle#	(g)

(a) Not specified--idle mixture adjusted to give highest smooth-idle rpm

(b) Manufacturer's specifications

(c) Not specified--function of tire size and gear ratios

(d) Not specified--varies with inertia load applied to equal road accel at 50% load

(e) Not specified--normal decel against applied inertia load

(f) Not specified--cruise load set to absorb 13.9 hp at rear wheels

(g) Not specified--function of inertia and cruise loads at cruise load condition

* Use gears 2-3-4 if four-speed transmission. On transmissions with overdrive, overdrive is locked out

\# Declutch at 10-12 mph and start timer for next idle mode

Table VI-2

DYNAMOMETER CYCLE FOR GROUP III TRUCKS WITH FOUR-SPEED TRANSMISSIONS

Repeat for a Total of Four Cycles

Mode	Man. Vac., in. Hg	Rear-wheels Speed, mph	Engine RPM	Duration, sec.
1. Idle	(a)	0	(b)	20
2. Gear - 2	WOT	(c)	Idle-2100	(d)
3. Gear - 3	WOT-7*	(c)	To 2100	(d)
4. Gear - 4	WOT	To 35	(c)	(d)
5. Decel	Closed Throttle	35-25	(c)	(e)
6. Cruise	(f)	25	(c)	12
7. Accel	7	25-28	(c)	(e)
8. Cruise	(f)	28	(c)	12
9. Decel	Closed Throttle	28-0	To Idle#	(e)

(a) Not specified--idle mixture adjusted to give highest smooth-idle rpm

(b) Manufacturer's specifications

(c) Not specified--function of tire size and gear ratios

(d) Not specified--varies with inertia load applied to equal road accel at 50% load

(e) Not specified--function of inertia and cruise loads at cruise load condition

(f) Not specified--cruise load set to absorb 22.2 hp at rear wheels at 25 mph, and 28.0 hp at 28 mph

* First half of accel at WOT; second half at 7 in. Hg

\# Declutch at 10-12 mph and start timer for next idle mode

Table VI-3

DYNAMOMETER CYCLE FOR GROUP III TRUCKS WITH FIVE-SPEED TRANSMISSIONS

Repeat for a Total of Four Cycles

Mode	Man. Vac., in. Hg	Rear-wheels Speed, mph	Engine RPM	Duration, sec.
1. Idle	(a)	0	(b)	20
2. Gear-2	WOT	(c)	Idle-2400	(d)
3. Gear-3	WOT-7*	(c)	To 2600	(d)
4. Gear-4	WOT	(c)	To 2000	(d)
5. Gear-5	WOT	To 35	(c)	(d)
6. Decel	Closed Throttle	35-25	(c)	(e)
7. Cruise	(f)	25	(c)	12
8. Accel	7	25-28	(c)	(e)
9. Cruise	(f)	28	(c)	12
10. Decel	Closed Throttle	28-0	To Idle#	(e)

(a) Not specified--idle mixture adjusted to give highest smooth-idle rpm

(b) Manufacturer's specifications

(c) Not specified--function of tire size and gear ratios

(d) Not specified--varies with inertia load applied to equal road accel at 50% load

(e) Not specified--function of inertia and cruise loads at cruise load condition

(f) Not specified--cruise load set to absorb 22.2 hp at rear wheels at 25 mph, and 28.0 hp at 28 mph

* First half of accel at WOT; second half at 7 in. Hg

\# Declutch at 10-12 mph and start timer for next idle mode

Table VI-4

DYNAMOMETER CYCLE FOR GROUP IV TRUCKS WITH FOUR-SPEED TRANSMISSIONS

Repeat for a Total of Two Cycles

Mode	Man. Vac., in. Hg	Rear-wheels Speed, mph	Engine RPM	Duration, sec.
1. Idle	(a)	0	(b)	27
2. Gear-2	8	(c)	Idle-3000	(d)
3. Gear-3	WOT-6*	(c)	To 3000	(d)
4. Gear-4	WOT	To 35	(c)	(d)
5. Decel	Closed Throttle	35-21	(c)	(e)
6. Cruise	(f)	21	(c)	28
7. Accel	(g)	21-24	(c)	(e)
8. Cruise	(f)	24	(c)	28
9. Decel	16	24-21	(c)	(e)
10. Cruise	(f)	21	(c)	28
11. Decel	Closed Throttle	21-0	To Idle#	(e)

(a) Not specified--idle mixture adjusted to give highest smooth-idle rpm

(b) Manufacturer's specifications

(c) Not specified--functions of tire size and gear ratios

(d) Not specified--varies with inertia load applied to equal road accel at 50% load

(e) Not specified--function of inertia and cruise loads at cruise load condition

(f) Not specified--cruise load set to absorb 25.2 hp at rear wheels at 21 mph, and 28.0 hp at 28 mph

(g) Accel at 11 in. Hg manifold vacuum or 1 in. Hg below 24-mph cruise vacuum, whichever is lower

* First half of accel at WOT; second half at 6 in. Hg

\# Declutch at 10-12 mph and start timer for next idle mode

Table VI-5

DYNAMOMETER CYCLE FOR GROUP IV TRUCKS WITH FIVE-SPEED TRANSMISSIONS

Repeat for a Total of Two Cycles

Mode	Man. Vac., in. Hg	Rear-wheels Speed, mph	Engine RPM	Duration, sec.
1. Idle	(a)	0	(b)	27
2. Gear - 2	8	(c)	Idle-3000	(d)
3. Gear - 3	WOT-6*	(c)	To 3000	(d)
4. Gear - 4	WOT	(c)	To 2900†	(d)
5. Gear - 5	8	To 35	(c)	(d)
6. Decel	Closed Throttle	35-21	(c)	(e)
7. Cruise	(f)	21	(c)	28
8. Accel	(g)	21-24	(c)	(e)
9. Cruise	(f)	24	(c)	28
10. Decel	16	24-21	(c)	(e)
11. Cruise	(f)	21	(c)	28
12. Decel	Closed Throttle	21-0	To Idle#	(e)

(a) Not specified--idle mixture adjusted to give highest smooth-idle rpm

(b) Manufacturer's specifications

(c) Not specified--function of tire size and gear ratios

(d) Not specified--varies with inertia load applied to equal road accel at 50% load

(e) Not specified--function of inertia and cruise loads at cruise load condition

(f) Not specified--cruise load set to absorb 25.2 hp at rear wheels at 21 mph, and 32.9 hp at 24 mph

(g) Accel at 11 in. Hg manifold vacuum or 1 in. Hg below 24-mph cruise vacuum, whichever is lower

* First half of accel at WOT; second half at 6 in. Hg

† Shift at 2900 rpm or 35 mph, whichever is lower

\# Declutch at 10-12 mph and start timer for next idle mode

VII. RESULTS FROM ROAD AND CHASSIS DYNAMOMETER TESTS

Test Periods

The road SLAVE mode data, which provided the basic mode information used for developing the chassis dynamometer mode cycles, was obtained between September and December 1966. The period from December 1966 to May 1967 was used to analyze the road SLAVE data and develop the chassis dynamometer mode cycles for the Group II, III and IV median trucks. The last stage of the test program--that of obtaining road emissions and mode-cycle SLAVE and emission data on the three groups of trucks--occupied the period from May to July 1967. Also, as mentioned earlier, at least half of the trucks in the three heavier weight groups were operated on the California cycle during the last stage of the program.

Test Numbering System

The following scheme was used for assigning test run numbers to the various types of tests performed on the trucks:

Type of Test	Run Series No.
Road SLAVE	1-50
Road Emissions	100 Series
Chassis Dyn. Mode Cycle (SLAVE and emissions)	200 Series
California Cycle (emissions only)	300 Series

The 1-50 test series also included "winter" and "load-effect" road emission tests in all weight groups. Results from these tests are discussed in Section IX. The 100, 200, and 300-Series tests were performed only in the three heavier weight groups (Groups II, III and IV).

Table VII-1 provides a cross-reference of run serial numbers of tests performed in the three heavier weight groups. Information in this table links the run numbers shown in the tables of results (Tables VII-2 to VII-34) and the comparison tables (Section VIII) to the list of vehicle numbers and specifications (Table III-1) found in Section III.

Replicate runs in each vehicle were assigned run suffix numbers of -1, -2, etc., thus resulting in the run numbers 104-1, 104-2, etc. that appear in the tables of results in the various sections.

Description of Tables of Results

Summaries of bag emission results are shown in Tables VII-2 through VII-19. Similar summary tables of vehicle parameters are shown in Tables VII-20 through VII-28, and vehicle modes in Tables VII-29 through VII-34. (The reader is advised to consult the list of tables found in the Table of Contents for assistance in locating tables for specific weight groups.) Data in these tables provided the basic information from which the comparison and data-analysis tables (Section VIII) were later developed. Chart emission data from the California-cycle tests is discussed in Sections VIII and IX. (Detailed run summaries of emissions and vehicle parameters for each truck are given in Appendix B; Appendices C and D, bound under separate cover, contain the detailed computer print-outs of the SLAVE mode data.)

All of the bag emission data shown in the summary tables was obtained with the Pace proportional sampler. The emission tables are grouped according to truck weight group and type of test (road, chassis dynamometer mode cycle, or California cycle). Within each group, the tables are further sub-grouped according to the scaling technique applied to the raw (diluted sample) data--i.e., N_2-scaled values and CO/CO_2-scaled values. The designation "DLA Road Data" found on some of the tables refers to the data obtained on the road route, which was the Detroit counterpart of the Los Angeles road route. The major emission variables presented in the tables are HC-IR, HC-FID, olefins-FID, aromatics-FID (except benzene), paraffins-FID, NOx, CO, and CO_2 on both a concentration and a mass basis.

Major items of interest found in the tables of vehicle parameters are air-fuel ratio, standard cubic feet of air per mile consumed by

the engine, standard cubic feet of exhaust gas per mile, and average miles per hour driving speed.

Vehicle mode data for the ten vehicles in each of the three weight groups are presented in an arrangement similar to the emission and vehicle parameter data except that no mode data was obtained in the California-cycle runs. From the computer printout of the SLAVE mode data, 17 variables were selected as being most generally representative of engine speed and load and transient engine conditions. (See Appendix A for a description of the computer handling of the SLAVE mode data.) The mode data selected are: percent time in idle (IDL), cruise (CRU), acceleration (ACC), and deceleration (DEC); percent major category-to-category changes from IDL to ACC, from CRU to ACC and DEC, from ACC to CRU and DEC, and from DEC to IDL, CRU, and ACC; percent time at full power (FP), part power (PT), driven power (DP), and closed throttle (CT); and average engine revolutions per minute.

Significance of Statistical Analyses of Results

Exhaust Emission Data

Tables VII-2 through VII-19 show that the truck-to-truck standard deviations of exhaust emission variables for the three types of tests (road, chassis mode cycle, and California cycle) run about 20 to 50% of their average values for the ten trucks in each weight group. These large standard deviations are not considered abnormal in view of the large variations in truck types and makes involved in one weight group. It is of interest that the standard deviations of a given variable were about the same regardless of whether the truck was operated on the road or the chassis dynamometer. Thus, the attempt to follow a specific driving schedule on the chassis dynamometer for the trucks in a given weight group did not reduce the variability from that found during normal road operation.

Vehicle Parameters

Tables of results of vehicle parameters are shown in Tables VII-20 through VII-28.

In general, the parameters that are likely to be influenced by test conditions (e.g., air-fuel ratio, standard cubic feet of exhaust gas per mile, and average miles per hour) were quite consistent among trucks in a weight group for both the road and chassis dynamometer runs. Representative values for standard deviations, expressed as percent of the average, are about 3% for air-fuel ratio, 15% for exhaust flow, and 2% for average speed. It is of interest to note that, despite the relatively good agreement of the vehicle-parameter data among trucks of a weight group, there was still a high truck-to-truck variability in the exhaust-emission data. Such a comparison suggests that a group of trucks can show highly different emission characteristics even though they operate at about the same air-fuel ratios and speeds, and use about the same amount of air. Further, it appears that the high variability of the emission data or relative homogeneity of the parameter data from a group of trucks is little affected by the type of operating schedule imposed on the trucks.

Vehicle Mode Data

Tables VII-29 through VII-34 show that the truck-to-truck standard deviations for the selected vehicle mode variables in DLA road-route operation are in most cases 10% or less of the average values. For the mode-cycle data, the standard deviations are generally somewhat less than for the road data. (No SLAVE mode data was obtained for the California-cycle runs.)

When compared with the emission data, the smaller values for the mode standard deviations (relative to the average) indicate that truck-to-truck mode operations were more uniform than the corresponding exhaust emission concentrations. This is not surprising since all trucks in a given weight group were driven over the same

route and, so far as possible, in the same manner on the chassis dynamometer cycles. This implies, probably correctly, that even if all trucks in a weight group could be driven in exactly the same manner, appreciable variability in truck-to-truck exhaust emissions would still occur. In other words, it would not be expected that different trucks would have the same emissions at a given condition of operation.

Table VII-1

CROSS-REFERENCE OF RUN NUMBERS

Make	No.	Run Serial Number: Road Runs* SLAVE	Road Runs* Emissions	Chassis Dyn. Runs: Mode Cycle	Chassis Dyn. Runs: Calif. Cycle
			(Group II)		
Chevrolet	1	16	130	230	-
Chevrolet	2	27	108	208	308
Chevrolet	3	46	131	231	331
Chevrolet	4	40	129	229	-
Dodge	1	38	123	223	-
Ford	1	13	125	225	325
Ford	2	39	114	214	-
Ford	3	2	113	213	313
GMC	1 (M)	6	104	204	304
IHC	1	43	122	222	322
			(Group III)		
Chevrolet	1	47	115	215	-
Chevrolet	2	35	107	207	-
Chevrolet	3	44	127	227	327
Chevrolet	4	45	124	224	324
Ford	1	42	105	205	305
Ford	2	18	119	219	-
Ford	3 (M)	33	103	203	303
Ford	4	34	106	206	-
GMC	1	37	112	212	312
IHC	1	50	126	226	326
			(Group IV)		
Chevrolet	1 (M)	5	101	201	301
Chevrolet	2	30	117	217	-
Dodge	1	36	128	228	328
Ford	1	23	111	211	311
Ford	2	26	116	216	-
Ford	3	24	110	210	-
GMC	1	22	121	221	321
IHC	1	48	109	209	-
IHC	2	21	120	220	320
IHC	3	28	118	218	318#

*All at 50% load

Single Calif. cycle only

(M) Median truck in weight group

Table VII-2

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 DLA ROAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
104-1	GMC	8779	13641	2517	3524	7599	1655	2.77	12.15	.0290	.0451	.0083	.0104	.0263	.0182	.1849	1.274
104-2	GMC	8104	12567	2554	3091	6923	1759	2.29	12.31	.0270	.0419	.0085	.0092	.0242	.0195	.1545	1.304
108-4	CHEV	7208	13077	1639	952	10485	1238	3.35	12.84	.0233	.0423	.0053	.0014	.0356	.0133	.2190	1.320
108-5	CHEV	6771	12759	1943	914	9902	1314	3.57	12.91	.0217	.0410	.0062	.0014	.0334	.0140	.2319	1.317
113-1	FORD	6628	11646	3191	3158	5297	1704	3.74	12.92	.0274	.0482	.0132	.0120	.0230	.0234	.3131	1.700
113-2	FORD	6575	12207	3219	3116	5873	1513	3.96	12.36	.0271	.0503	.0133	.0117	.0254	.0207	.3302	1.619
114-1	FORD	5591	10425	3309	2918	4199	1173	3.45	12.68	.0191	.0355	.0113	.0093	.0150	.0133	.2376	1.373
114-2	FORD	5306	10150	3191	2581	4378	1205	3.61	12.23	.0190	.0364	.0114	.0085	.0165	.0144	.2616	1.394
122-2	IHC	7752	14114	1317	5457	7339	874	3.60	12.95	.0230	.0420	.0039	.0152	.0229	.0086	.2160	1.222
122-4	IHC	8824	14783	1781	4632	8370	905	3.62	12.65	.0279	.0467	.0056	.0134	.0278	.0095	.2315	1.270
123-3	DODGE	6523	11234	794	3491	6948	694	4.86	11.66	.0220	.0380	.0027	.0106	.0246	.0078	.3321	1.252
123-4	DODGE	6850	11788	787	3731	7270	700	5.01	12.04	.0213	.0367	.0024	.0105	.0237	.0072	.3153	1.189
125-2	FORD	8908	15761	1244	4525	9992	973	5.27	12.38	.0281	.0497	.0039	.0127	.0331	.0102	.3360	1.241
125-3	FORD	8874	14508	1116	4094	9298	1010	4.83	11.92	.0274	.0448	.0034	.0112	.0301	.0103	.3011	1.168
129-2	CHEV	9290	15299	1177	2690	11432	1169	4.51	12.04	.0310	.0510	.0039	.0071	.0400	.0129	.3038	1.275
129-3	CHEV	10302	16692	1538	2590	12564	1168	4.62	12.07	.0334	.0541	.0050	.0064	.0427	.0126	.3031	1.243
130-4	CHEV	6733	11932	1440	1483	9009	1437	2.85	12.69	.0206	.0365	.0044	.0032	.0289	.0146	.1761	1.232
130-5	CHEV	6733	11932	1440	1483	9009	1437	2.85	12.69	.0206	.0365	.0044	.0032	.0289	.0146	.1761	1.232
131-2	CHEV	8416	13938	1262	1262	11414	345	4.68	10.48	.0198	.0328	.0030	.0017	.0281	.0027	.2226	.783
131-3	CHEV	8236	13308	1070	1428	10810	443	4.62	10.39	.0199	.0321	.0026	.0022	.0274	.0035	.2255	.797
AVERAGE		7620	13088	1826	2856	8405	1135	3.90	12.22	.0244	.0421	.0061	.0081	.0279	.0126	.2536	1.260
CONF. LIM.		7002 TO 8237	12264 TO 13911	1426 TO 2226	2248 TO 3463	7283 TO 9527	949 TO 1322	3.50 TO 4.30	11.88 TO 12.55	.0224 TO .0265	.0391 TO .0451	.0045 TO .0078	.0060 TO .0101	.0247 TO .0311	.0101 TO .0151	.2261 TO .2811	1.163 TO 1.358
STD. DEV.		1319	1759	854	1297	2398	397	.85	.71	.0043	.0065	.0036	.0044	.0068	.0054	.0588	.208

Table VII-3

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 DLA ROAD DATA

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
104-1	GMC	9234	14348	2648	3707	7093	1741	2.91	12.78	.0305	.0474	.0087	.0110	.0277	.0191	.1945	1.341
104-2	GMC	8605	13344	2711	3282	7551	1868	2.43	13.07	.0287	.0445	.0090	.0097	.0257	.0207	.1641	1.384
108-4	CHEV	7208	13077	1639	952	10485	1238	3.35	12.84	.0233	.0423	.0053	.0014	.0356	.0133	.2190	1.320
108-5	CHEV	6771	12759	1943	914	9902	1314	3.57	12.91	.0217	.0410	.0062	.0014	.0334	.0140	.2319	1.317
113-1	FORD	6628	11646	3191	3158	5297	1704	3.74	12.92	.0274	.0482	.0132	.0120	.0230	.0234	.3131	1.700
113-2	FORD	6575	12207	3219	3116	5873	1513	3.96	12.36	.0271	.0503	.0133	.0117	.0254	.0207	.3302	1.619
114-1	FORD	5591	10425	3309	2918	4199	1173	3.45	12.68	.0191	.0355	.0113	.0093	.0150	.0133	.2376	1.373
114-2	FORD	5342	10219	3213	2598	4408	1214	3.63	12.32	.0192	.0367	.0115	.0086	.0166	.0145	.2633	1.404
122-2	IHC	7752	14114	1317	5457	7339	874	3.60	12.95	.0230	.0420	.0039	.0152	.0229	.0086	.2160	1.222
122-4	IHC	8824	14783	1781	4632	8370	905	3.62	12.65	.0279	.0467	.0056	.0134	.0278	.0095	.2315	1.270
123-3	DODGE	6523	11234	794	3491	6948	694	4.86	11.66	.0220	.0380	.0027	.0106	.0246	.0078	.3321	1.252
123-4	DODGE	6850	11788	787	3731	7270	700	5.01	12.04	.0213	.0367	.0024	.0105	.0237	.0072	.3153	1.189
125-2	FORD	8908	15761	1244	4525	9992	973	5.27	12.38	.0281	.0497	.0039	.0127	.0331	.0102	.3360	1.241
125-3	FORD	8874	14508	1116	4094	9298	1010	4.83	11.92	.0274	.0448	.0034	.0112	.0301	.0103	.3011	1.168
129-2	CHEV	9290	15299	1177	2690	11432	1169	4.51	12.04	.0310	.0510	.0039	.0071	.0400	.0129	.3038	1.275
129-3	CHEV	10302	16692	1538	2590	12564	1168	4.62	12.07	.0334	.0541	.0050	.0064	.0427	.0126	.3031	1.243
130-4	CHEV	6792	12037	1453	1496	9088	1450	2.87	12.80	.0208	.0368	.0044	.0032	.0291	.0147	.1776	1.243
130-5	CHEV	6792	12037	1453	1496	9088	1450	2.87	12.80	.0208	.0368	.0044	.0032	.0291	.0147	.1776	1.243
131-2	CHEV	9141	15139	1371	1371	12397	375	5.09	11.38	.0215	.0356	.0032	.0018	.0306	.0029	.2418	.850
131-3	CHEV	9034	14598	1174	1566	11858	485	5.07	11.40	.0218	.0353	.0028	.0024	.0300	.0039	.2474	.874
AVERAGE		7751	13300	1853	2889	8557	1150	3.96	12.40	.0248	.0427	.0062	.0081	.0283	.0127	.2569	1.276
CONF. LIM.		7092 TO 8410	12442 TO 14158	1450 TO 2256	2285 TO 3492	7380 TO 9734	959 TO 1341	3.55 TO 4.37	12.15 TO 12.65	.0228 TO .0268	.0398 TO .0455	.0045 TO .0079	.0061 TO .0102	.0251 TO .0315	.0102 TO .0153	.2305 TO .2832	1.186 TO 1.367
STD. DEV.		1407	1832	860	1289	2515	408	.88	.53	.0043	.0061	.0036	.0044	.0068	.0054	.0564	.194

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Table VII-4

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 CHASSIS DYN. DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
204-2	GMC	8386	13579	4046	2398	7135	2104	1.97	13.22	.0271	.0440	.0131	.0066	.0242	.0226	.1290	1.360
204-5	GMC	9302	14714	4387	2583	7743	1868	2.56	13.56	.0303	.0479	.0143	.0072	.0265	.0202	.1687	1.403
208-4	CHEV	8456	14510	2735	1051	10724	969	3.88	11.74	.0264	.0453	.0085	.0016	.0351	.0100	.2450	1.164
206-5	CHEV	8014	14273	2164	1080	11028	844	4.67	11.84	.0257	.0457	.0069	.0017	.0371	.0090	.3028	1.206
213-2	FORD	9048	15243	3585	4126	7531	1609	3.13	12.55	.0338	.0570	.0134	.0141	.0296	.0200	.2367	1.491
213-8	FORD	9822	16168	3694	4481	7993	1562	3.17	12.46	.0383	.0630	.0144	.0159	.0327	.0202	.2494	1.541
214-2	FORD	6736	12451	3449	3651	5351	1250	3.53	12.83	.0234	.0432	.0120	.0118	.0195	.0144	.2476	1.415
214-3	FORD	6895	12934	3614	3820	5500	1222	3.44	12.99	.0237	.0445	.0124	.0122	.0198	.0140	.2390	1.418
222-1	IHC	7807	13964	1558	5110	7296	1366	2.45	13.02	.0249	.0445	.3050	.0151	.0244	.0144	.1576	1.317
222-2	IHC	7984	13773	1382	4956	7435	1382	2.53	12.98	.0265	.0458	.0046	.0153	.0259	.0153	.1701	1.370
223-1	DODGE	5695	10170	1578	2930	5671	1232	2.88	12.25	.0179	.0320	.0050	.0083	.0187	.0128	.1829	1.221
223-3	DODGE	5540	9842	1751	2697	5394	1237	2.65	12.67	.0178	.0317	.0056	.0078	.0182	.0132	.1728	1.296
225-1	FORD	8547	14216	973	4856	8387	1081	4.75	11.95	.0277	.0461	.0032	.0144	.0285	.0116	.3114	1.231
225-2	FORD	8506	13877	674	4701	8503	1057	4.39	12.19	.0274	.0448	.0022	.0138	.0288	.0113	.2866	1.249
229-2	CHEV	9492	15810	1247	2313	12249	822	5.71	11.64	.0274	.0456	.0036	.0049	.0371	.0079	.3330	1.066
229-3	CHEV	9033	15004	1291	1602	12121	911	5.47	11.26	.0258	.0429	.0037	.0029	.0363	.0086	.3159	1.022
230-3	CHEV	5340	9474	1037	904	7534	1985	2.36	12.97	.0167	.0296	.0032	.0017	.0247	.0206	.1491	1.287
230-4	CHEV	5495	9492	945	898	7649	2024	2.25	12.36	.0170	.0293	.0029	.0016	.0248	.0207	.1406	1.212
231-2	CHEV	10013	15641	516	1228	13897	493	4.69	11.07	.0259	.0405	.0013	.0014	.0377	.0042	.2456	.910
231-3	CHEV	10494	16902	1005	1379	14518	555	4.78	11.18	.0261	.0421	.0025	.0017	.0379	.0046	.2407	.883
AVERAGE		8030	13602	2091	2838	8682	1278	3.56	12.34	.0255	.0433	.0069	.0080	.0284	.0138	.2262	1.253
COEF. LIN.		7285 TO 8775	12551 TO 14653	1499 TO 2672	2127 TO 3548	7378 TO 9987	1059 TO 1497	3.03 TO 4.10	12.00 TO 12.67	.0230 TO .0280	.0394 TO .0471	.0047 TO .0090	.0054 TO .0106	.0252 TO .0316	.0112 TO .0164	.1964 TO .2560	1.170 TO 1.337
STD. DEV.		1591	2246	1263	1517	2787	467	1.15	.72	.0054	.0082	.0046	.0056	.0068	.0055	.0637	.178

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Table VII-5

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 CHASSIS DYN. DATA

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
204-2	GMC	8409	13616	4057	2404	7155	2109	1.98	13.26	.0272	.0441	.0131	.0067	.0243	.0227	.1293	1.363
204-5	GMC	9302	14714	4387	2583	7743	1868	2.56	13.56	.0303	.0479	.0143	.0072	.0265	.0202	.1687	1.403
208-4	CHEV	8705	14938	2816	1082	11040	997	4.00	12.08	.0272	.0466	.0088	.0017	.0362	.0103	.2522	1.198
208-5	CHEV	8014	14273	2164	1080	11028	844	4.67	11.84	.0257	.0457	.0069	.0017	.0371	.0090	.3028	1.206
213-2	FORD	9101	15332	[illegible]06	4150	7575	1618	3.15	12.63	.0340	.0574	.0135	.0141	.0297	.0201	.2381	1.500
213-8	FORD	9920	16343	3734	4529	8080	1579	3.20	12.59	.0387	.0637	.0145	.0161	.0330	.0204	.2521	1.558
214-2	FORD	6736	12451	3449	3651	5351	1250	3.53	12.83	.0234	.0432	.0120	.0118	.0195	.0144	.2476	1.415
214-3	FORD	6895	12934	3614	3820	5500	1222	3.44	12.99	.0237	.0445	.0124	.0122	.0198	.0140	.2390	1.418
222-1	IHC	7830	14006	1563	5125	7318	1370	2.46	13.06	.0249	.0446	.0050	.0152	.0244	.0145	.1581	1.321
222-2	IHC	8006	13812	1386	4969	7456	1386	2.54	13.01	.0266	.0459	.0046	.0153	.0260	.0153	.1706	1.374
223-1	DODGE	5916	10575	1639	3044	5891	1280	2.99	12.72	.0186	.0332	.0051	.0087	.0194	.0133	.1900	1.269
223-3	DODGE	5644	10027	1794	2748	5495	1261	2.70	12.91	.0182	.0323	.0057	.0080	.0186	.0135	.1761	1.321
225-1	FORD	8547	14216	973	4856	8387	1081	4.75	11.95	.0277	.0461	.0032	.0144	.0285	.0116	.3114	1.231
225-2	FORD	8506	13877	674	4701	8503	1057	4.39	12.19	.0274	.0448	.0022	.0138	.0288	.0113	.2866	1.249
229-2	CHEV	9492	15810	1247	2313	12249	922	5.71	11.64	.0274	.0456	.0036	.0049	.0371	.0079	.3330	1.066
229-3	CHEV	9033	15004	1281	1602	12121	911	5.47	11.26	.0258	.0429	.0037	.0029	.0363	.0086	.3159	1.022
230-3	CHEV	5392	9567	1047	912	7607	2005	2.38	13.10	.0168	.0299	.0033	.0017	.0249	.0208	.1505	1.299
230-4	CHEV	5825	10062	1002	952	8108	2146	2.39	13.10	.0180	.0311	.0031	.0017	.0263	.0220	.1490	1.284
231-2	CHEV	10416	16272	537	1278	14457	513	4.88	11.52	.0270	.0421	.0014	.0015	.0392	.0044	.2555	.947
231-3	CHEV	10789	17378	1033	1418	14927	570	4.92	11.49	.0268	.0432	.0026	.0017	.0390	.0047	.2474	.908
AVERAGE		8124	13760	2099	2860	8799	1294	3.61	12.49	.0258	.0437	.0070	.0081	.0287	.0140	.2287	1.268
CONF. LIM.		7374 TO 8873	12714 TO 14806	1508 TO 2691	2152 TO 3569	7455 TO 10143	1071 TO 1517	3.07 TO 4.14	12.17 TO 12.81	.0233 TO .0282	.0400 TO .0475	.0048 TO .0091	.0054 TO .0107	.0255 TO .0320	.0113 TO .0166	.1992 TO .2582	1.186 TO 1.349
STD. DEV.		1601	2234	1263	1513	2871	477	1.15	.68	.0053	.0080	.0046	.0056	.0069	.0056	.0630	.173

Table VII-6

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 CALIF. CYCLE DATA

EFFLUENT VARIABLES ..... NITPOGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
304-6	GMC	2252	4008	1187	921	1899	2882	1.80	14.10	.0064	.0114	.0034	.0024	.0057	.0273	.1036	1.[illegible]
304-7	GMC	1845	3620	1125	856	1638	2897	1.78	13.79	.0044	.0087	.0027	.0019	.0041	.0231	.0863	1.051
308-6	CHEV	1939	3997	1046	213	2737	2019	2.41	13.65	.0061	.0127	.0033	.0003	.0091	.0212	.1543	1.374
308-7	CHEV	1907	3982	1011	149	2822	2069	2.33	13.48	.0063	.0131	.0033	.0000	.0098	.0227	.1554	1.414
313-5	FORD	2499	4768	1632	1176	1960	2776	1.47	13.53	.0104	.0198	.0068	.0045	.0085	.0382	.1233	1.763
313-6	FORD	2549	4872	1611	1262	1999	2888	1.48	13.59	.0105	.0200	.0066	.0048	.0086	.0395	.1230	1.776
322-3	IHC	3221	6349	993	2141	3216	1379	2.28	13.32	.0096	.0188	.0029	.0059	.0100	.0136	.1370	1.256
322-4	IHC	3381	6489	921	2457	3111	1491	2.28	13.36	.0101	.0194	.0027	.0069	.0097	.0148	.1378	1.267
325-3	FORD	3563	6587	987	1940	3659	2541	3.20	13.02	.0110	.0203	.0030	.0054	.0119	.0261	.2000	1.278
325-4	FORD	3427	6241	913	1826	3502	2549	3.16	13.01	.0106	.0193	.0028	.0051	.0113	.0261	.1970	1.275
331-1	CHEV	3991	6806	362	1721	4723	362	2.87	12.41	.0106	.0180	.0010	.0039	.0131	.0032	.1537	1.044
331-2	CHEV	3061	5560	835	754	3970	390	2.63	12.99	.0082	.0149	.0022	.0015	.0112	.0035	.1425	1.106
AVERAGE		2802	5273	1051	1284	2936	2020	2.31	13.35	.0087	.0164	.0034	.0036	.0094	.0216	.1428	1.325
CONF. LIM.		2338 TO 3267	4512 TO 6034	838 TO 1265	812 TO 1756	2334 TO 3537	1430 TO 2610	1.93 TO 2.68	13.07 TO 13.64	.0072 TO .0101	.0138 TO .0189	.0023 TO .0045	.0021 TO .0050	.0078 TO .0110	.0143 TO .0289	.1217 TO .1640	1.172 TO 1.478
STD. DEV.		731	1197	335	742	946	928	.59	.45	.0023	.0040	.0017	.0023	.0025	.0115	.0333	.241

Table VII-7

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 CALIF. CYCLE DATA

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
304-6	GMC	2252	4008	1187	921	1899	2882	1.80	14.10	.0064	.0114	.0034	.0024	.0057	.0273	.1036	1.277
304-7	GMC	1845	3620	1125	856	1638	2897	1.78	13.79	.0044	.0087	.0027	.0019	.0041	.0231	.0863	1.051
308-6	CHEV	1939	3997	1046	213	2737	2019	2.41	13.65	.0061	.0127	.0033	.0003	.0091	.0212	.1543	1.374
308-7	CHEV	1907	3982	1011	149	2822	2069	2.33	13.48	.0063	.0131	.0033	.0000	.0098	.0227	.1554	1.414
313-5	FORD	2499	4768	1632	1176	1960	2776	1.47	13.53	.0104	.0198	.0068	.0045	.0085	.0382	.1233	1.783
313-6	FORD	2549	4872	1611	1262	1999	2888	1.48	13.59	.0105	.0200	.0066	.0048	.0086	.0395	.1230	1.776
322-3	IHC	3221	6349	993	2141	3216	1379	2.28	13.32	.0096	.0188	.0029	.0059	.0100	.0136	.1370	1.256
322-4	IHC	3381	6489	921	2457	3111	1491	2.28	13.36	.0101	.0194	.0027	.0060	.0097	.0148	.1378	1.267
325-3	FORD	3563	6587	997	1940	3659	2541	3.20	13.02	.0110	.0203	.0030	.0054	.0119	.0261	.2000	1.278
325-4	FORD	3427	6241	913	1826	3502	2549	3.16	13.01	.0106	.0193	.0028	.0051	.0113	.0261	.1970	1.275
331-1	CHEV	4102	6995	372	1769	4855	372	2.95	12.75	.0109	.0185	.0010	.0041	.0135	.0033	.1579	1.073
331-2	CHEV	3061	5560	835	754	3970	390	2.63	12.99	.0082	.0149	.0022	.0015	.0112	.0035	.1425	1.106
AVERAGE		2812	5289	1052	1288	2947	2021	2.31	13.38	.0087	.0164	.0034	.0036	.0095	.0216	.1432	1.328
CONF. LIM.		2336 TO 3287	4513 TO 6064	840 TO 1265	815 TO 1762	2331 TO 3563	1432 TO 2610	1.93 TO 2.70	13.14 TO 13.63	.0072 TO .0102	.0138 TO .0190	.0023 TO .0045	.0021 TO .0050	.0078 TO .0111	.0143 TO .0289	.1219 TO .1644	1.176 TO 1.479
STD. DEV.		748	1220	334	745	969	927	.60	.39	.0023	.0040	.0017	.0023	.0026	.0115	.0334	.238

Table VII-8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 DLA ROAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
103-5	FORD	5315	9039	2178	2777	4084	2178	1.92	12.52	.0310	.0527	.0127	.0150	.0250	.0421	.2267	2.318
103-6	FORD	5361	8912	2072	2617	4223	2370	1.78	12.56	.0310	.0515	.0120	.0140	.0256	.0455	.2078	2.307
105-1	FORD	4469	8159	1597	1862	4700	1539	3.40	13.02	.0173	.0317	.0062	.0063	.0191	.0198	.2665	1.604
105-2	FORD	4483	8094	1599	1912	4583	1419	3.56	12.46	.0190	.0343	.0068	.0071	.0203	.0199	.3042	1.675
106-2	FORD	10908	18433	3687	2458	12288	2004	2.46	12.50	.0638	.1079	.0216	.0109	.0754	.0389	.2915	2.324
106-3	FORD	11039	18092	3619	2283	12190	1900	2.49	12.38	.0705	.1156	.0231	.0108	.0817	.0403	.3214	2.513
107-1	CHEV	5885	11145	2334	2204	6607	1583	3.12	12.55	.0271	.0514	.0108	.0087	.0320	.0242	.2910	1.838
107-2	CHEV	6616	12230	2515	2208	7507	1549	3.21	12.81	.0302	.0558	.0115	.0084	.0359	.0235	.2961	1.856
112-1	GMC	4890	9852	2093	3002	3857	1621	3.91	12.61	.0230	.0462	.0140	.0132	.0190	.0253	.3706	1.880
112-2	GMC	5400	10298	3219	3056	4023	1451	3.87	12.58	.0255	.0487	.0152	.0135	.0199	.0228	.3693	1.888
115-2	CHEV	4796	9259	2643	2756	3859	918	6.28	11.03	.0213	.0412	.0118	.0114	.0180	.0136	.5653	1.558
115-3	CHEV	4773	9278	2599	2968	3711	890	5.86	11.04	.0211	.0410	.0115	.0123	.0172	.0131	.5235	1.550
119-1	FORD	7883	12490	2269	4431	5790	2307	2.33	12.42	.0408	.0647	.0117	.0215	.0315	.0397	.2445	2.043
119-2	FORD	8496	13599	2422	4135	7041	2475	2.01	12.04	.0429	.0687	.0122	.0191	.0373	.0415	.2048	1.931
124-1	CHEV	3844	7080	1121	1704	4264	1169	4.57	11.79	.0162	.0298	.0047	.0063	.0188	.0163	.3889	1.575
124-2	CHEV	3849	7077	1106	1838	4133	1238	4.47	11.89	.0151	.0277	.0043	.0064	.0170	.0161	.3538	1.478
126-1	IHC	6114	10425	1065	2340	7020	1080	2.79	12.29	.0262	.0447	.0046	.0086	.0316	.0154	.2421	1.674
126-2	IHC	5894	10133	990	2458	6685	1088	2.78	12.43	.0248	.0427	.0042	.0090	.0295	.0152	.2371	1.664
127-1	CHEV	6852	12092	1137	2655	8300	1094	4.76	12.05	.0320	.0564	.0053	.0105	.0406	.0169	.4493	1.785
127-2	CHEV	6799	12191	2067	2543	7580	1313	4.51	11.96	.0323	.0579	.0098	.0103	.0378	.0207	.4332	1.804
AVERAGE		6183	10894	2161	2610	6122	1559	3.50	12.25	.0306	.0535	.0107	.0112	.0317	.0255	.3294	1.863
CONF. LIM.		5224 TO 7141	9442 TO 12345	1768 TO 2554	2284 TO 2935	4917 TO 7327	1328 TO 1790	2.91 TO 4.10	12.01 TO 12.49	.0237 TO .0374	.0429 TO .0642	.0082 TO .0132	.0093 TO .0131	.0233 TO .0400	.0203 TO .0308	.2815 TO .3773	1.724 TO 2.003
STD. DEV.		2048	3101	839	695	2574	493	1.27	.52	.0146	.0228	.0053	.0041	.0178	.0112	.1023	.298

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Table VII-9

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 DLA ROAD DATA

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
103-5	FORD	5619	9555	2302	2935	4317	2302	2.03	13.24	.0327	.0557	.0134	.0159	.0264	.0445	.2397	2.451
103-6	FORD	5674	9432	2193	2770	4469	2509	1.88	13.29	.0328	.0545	.0127	.0148	.0271	.0482	.2199	2.442
105-1	FORD	4469	8159	1597	1862	4700	1539	3.40	13.02	.0173	.0317	.0062	.0063	.0191	.0198	.2665	1.604
105-2	FORD	4483	8094	1599	1912	4583	1419	3.56	12.46	.0190	.0343	.0068	.0071	.0203	.0199	.3042	1.675
106-2	FORD	11344	19169	3834	2556	12778	2084	2.56	13.00	.0664	.1122	.0224	.0113	.0784	.0405	.3032	2.416
106-3	FORD	11567	18957	3792	2392	12773	1991	2.61	12.97	.0739	.1212	.0242	.0113	.0856	.0423	.3367	2.633
107-1	CHEV	5922	11216	2349	2218	6649	1593	3.14	12.63	.0273	.0517	.0108	.0087	.0322	.0244	.2928	1.850
107-2	CHEV	6616	12230	2515	2208	7507	1549	3.21	12.81	.0302	.0558	.0115	.0084	.0359	.0235	.2961	1.856
112-1	GMC	4890	9852	2993	3002	3857	1621	3.91	12.61	.0230	.0462	.0140	.0132	.0190	.0253	.3706	1.880
112-2	GMC	5400	10298	3219	3056	4023	1451	3.87	12.58	.0255	.0487	.0152	.0135	.0199	.0228	.3693	1.888
115-2	CHEV	4796	9259	2643	2756	3859	918	6.28	11.03	.0213	.0412	.0118	.0114	.0160	.0136	.5653	1.558
115-3	CHEV	4773	9278	2599	2968	3711	890	5.86	11.04	.0211	.0410	.0115	.0123	.0172	.0131	.5235	1.550
119-1	FORD	8294	13140	2387	4661	6092	2427	2.46	13.06	.0430	.0681	.0124	.0226	.0331	.0417	.2572	2.149
119-2	FORD	9298	14883	2651	4526	7706	2708	2.20	13.18	.0469	.0751	.0134	.0210	.0408	.0454	.2242	2.113
124-1	CHEV	3844	7089	1121	1704	4264	1169	4.57	11.79	.0162	.0298	.0047	.0063	.0188	.0163	.3889	1.575
124-2	CHEV	3849	7077	1106	1838	4133	1238	4.47	11.89	.0151	.0277	.0043	.0064	.0170	.0161	.3538	1.478
126-1	IHC	6358	10841	1107	2434	7301	1123	2.90	12.78	.0273	.0465	.0047	.0089	.0328	.0160	.2518	1.741
126-2	IHC	6070	10436	1020	2532	6885	1121	2.87	12.80	.0256	.0440	.0043	.0092	.0304	.0157	.2442	1.713
127-1	CHEV	6852	12092	1137	2655	8300	1094	4.76	12.05	.0320	.0564	.0053	.0105	.0406	.0169	.4493	1.785
127-2	CHEV	6709	12191	2067	2543	7580	1313	4.51	11.96	.0323	.0579	.0098	.0103	.0378	.0207	.4332	1.804
AVERAGE		6345	11162	2211	2676	6274	1602	3.55	12.51	.0314	.0550	.0110	.0115	.0325	.0263	.3345	1.908
CONF. LIM.		5305 TO 7386	9594 TO 12730	1803 TO 2619	2315 TO 3037	5004 TO 7544	1345 TO 1860	2.98 TO 4.13	12.19 TO 12.83	.0241 TO .0388	.0436 TO .0664	.0084 TO .0136	.0094 TO .0136	.0237 TO .0413	.0206 TO .0321	.2886 TO .3804	1.747 TO 2.069
STD. DEV.		2223	3350	871	771	2713	550	1.22	.67	.0156	.0244	.0056	.0045	.0188	.0123	.0981	.345

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Table VII-10

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 CHASSIS DYN. DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
203-3	FORD	5766	9474	2287	2614	4572	1875	1.91	11.84	.0326	.0536	.0129	.0135	.0271	.0352	.2181	2.129
203-4	FORD	6123	9992	2179	2799	5015	2510	1.64	12.40	.0358	.0585	.0127	.0150	.0308	.0488	.1945	2.307
205-3	FORD	4909	8496	2698	1567	4231	1701	3.77	11.88	.0235	.0407	.0129	.0065	.0213	.0271	.3649	1.809
205-4	FORD	4758	8436	2926	1259	4251	1676	3.76	11.83	.0226	.0400	.0139	.0050	.0211	.0264	.3601	1.782
206-3	FORD	11712	18575	3245	2707	12623	2590	1.86	12.38	.0746	.1183	.0206	.0133	.0843	.0548	.2399	2.504
206-4	FORD	11372	18274	3224	3224	11826	2573	1.72	12.06	.0744	.1195	.0211	.0173	.0811	.0559	.2273	2.505
207-2	CHEV	6205	11340	2632	1742	6966	1794	3.67	12.07	.0311	.0568	.0132	.0070	.0366	.0298	.3715	1.921
207-3	CHEV	5949	11210	2491	1658	7061	1735	3.87	12.24	.0300	.0565	.0126	.0066	.0374	.0291	.3949	1.961
212-2	GMC	4596	8417	2477	2369	3571	2646	2.18	12.92	.0236	.0431	.0127	.0113	.0192	.0450	.2254	2.103
212-3	GMC	5043	8851	2417	2462	3973	2449	1.90	13.05	.0249	.0437	.0119	.0112	.0206	.0402	.1899	2.048
215-1	CHEV	5964	10097	2424	3149	4524	1001	5.42	11.31	.0266	.0450	.0108	.0131	.0211	.0148	.4882	1.601
215-4	CHEV	6237	10767	2320	3479	4968	1063	5.47	11.54	.0277	.0479	.0103	.0144	.0232	.0157	.4915	1.630
219-1	FORD	7053	11793	2259	4398	5137	2659	2.23	12.28	.0367	.0613	.0117	.0216	.0280	.0459	.2342	2.028
219-2	FORD	6740	11405	1932	4639	4834	2764	2.03	12.58	.0345	.0583	.0099	.0225	.0259	.0469	.2099	2.042
224-1	CHEV	3925	7091	863	2206	4023	1281	4.15	12.62	.0152	.0274	.0033	.0078	.0163	.0164	.3240	1.547
224-2	CHEV	4309	7717	1248	2157	4311	1184	4.24	11.77	.0172	.0301	.0049	.0076	.0176	.0153	.3342	1.459
226-1	IHC	4799	8178	990	2225	4963	1442	2.30	12.43	.0240	.0409	.0050	.0099	.0261	.0240	.2325	1.975
226-2	IHC	4877	8226	843	2356	5028	1538	2.21	12.22	.0238	.0401	.0041	.0103	.0257	.0249	.2175	1.893
227-3	CHEV	5766	10253	1487	2666	6099	1574	4.17	11.90	.0304	.0531	.0077	.0123	.0332	.0271	.4370	1.959
227-4	CHEV	5706	9856	1252	2345	6259	1772	3.88	12.12	.0290	.0500	.0064	.0104	.0333	.0299	.3980	1.954
AVERAGE		6009	10422	2109	2601	5711	1891	3.12	12.17	.0319	.0542	.0109	.0118	.0315	.0327	.3077	1.958
CONF. LIM.		5149 TO 7050	8995 TO 11848	1758 TO 2460	2198 TO 3004	4577 TO 6846	1618 TO 2164	2.54 TO 3.70	11.97 TO 12.38	.0246 TO .0392	.0430 TO .0655	.0087 TO .0132	.0096 TO .0141	.0228 TO .0402	.0265 TO .0388	.2607 TO .3546	1.826 TO 2.089
STD. DEV.		2031	3047	750	861	2423	583	1.25	.43	.0156	.0240	.0048	.0048	.0185	.0132	.1003	.281

Table VII-11

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 CHASSIS DYN. DATA

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
203-3	FORD	6431	10565	2551	2915	5099	2091	2.13	13.21	.0364	.0598	.0144	.0151	.0303	.0393	.2432	2.374
203-4	FORD	6579	10737	2341	3008	5388	2697	1.77	13.33	.0385	.0629	.0137	.0161	.0331	.0524	.2090	2.479
205-3	FORD	5028	8701	2763	1605	4333	1742	3.86	12.17	.0241	.0417	.0132	.0067	.0218	.0277	.3738	1.853
205-4	FORD	4892	8673	3008	1295	4370	1724	3.86	12.17	.0232	.0411	.0142	.0051	.0217	.0271	.3702	1.832
206-3	FORD	12541	19880	3474	2899	13516	2773	2.00	13.25	.0799	.1267	.0221	.0143	.0903	.0586	.2569	2.681
206-4	FORD	12530	20136	3552	3552	13031	2835	1.89	13.29	.0819	.1317	.0232	.0191	.0894	.0616	.2504	2.760
207-2	CHEV	6209	11512	2672	1760	7072	1821	3.72	12.26	.0316	.0577	.0134	.0071	.0372	.0303	.3771	1.950
207-3	CHEV	5949	11210	2491	1658	7061	1735	3.87	12.24	.0300	.0565	.0126	.0066	.0374	.0291	.3949	1.961
212-2	GMC	4686	8582	2526	2415	3641	2698	2.22	13.17	.0240	.0440	.0129	.0115	.0196	.0459	.2298	2.144
212-3	GMC	5130	9004	2458	2504	4041	2491	1.93	13.27	.0253	.0445	.0121	.0114	.0209	.0409	.1932	2.083
215-1	CHEV	5964	10097	2424	3140	4524	1001	5.42	11.31	.0266	.0450	.0108	.0131	.0211	.0148	.4882	1.601
215-4	CHEV	6237	10767	2320	3479	4968	1063	5.47	11.54	.0277	.0479	.0103	.0144	.0232	.0157	.4915	1.630
219-1	FORD	7527	12585	2410	4693	5482	2837	2.38	13.10	.0391	.0654	.0125	.0230	.0299	.0490	.2499	2.164
219-2	FORD	7076	11973	2028	4870	5075	2901	2.13	13.20	.0362	.0612	.0104	.0236	.0272	.0493	.2203	2.144
224-1	CHEV	3925	7091	863	2206	4023	1281	4.15	12.62	.0152	.0274	.0033	.0078	.0163	.0164	.3240	1.547
224-2	CHEV	4446	7800	1262	2180	4358	1196	4.28	11.90	.0173	.0304	.0049	.0077	.0178	.0155	.3377	1.474
226-1	IHC	5052	8609	1042	2342	5225	1518	2.42	13.08	.0253	.0431	.0052	.0104	.0274	.0252	.2448	2.079
226-2	IHC	5232	8825	904	2527	5394	1650	2.37	13.11	.0255	.0431	.0044	.0110	.0276	.0267	.2333	2.031
227-3	CHEV	5805	10304	1495	2670	6130	1581	4.19	11.96	.0306	.0534	.0077	.0123	.0333	.0272	.4392	1.969
227-4	CHEV	5718	9878	1255	2350	6273	1776	3.89	12.15	.0290	.0501	.0064	.0104	.0334	.0299	.3989	1.959
AVERAGE		6356	10846	2191	2704	5950	1970	3.20	12.62	.0334	.0567	.0114	.0123	.0329	.0341	.3163	2.036
COEF. LIM.		5283 TO 7430	9235 TO 12457	1816 TO 2567	2269 TO 3140	4697 TO 7203	1669 TO 2271	2.64 TO 3.76	12.31 TO 12.92	.0252 TO .0415	.0441 TO .0692	.0089 TO .0138	.0099 TO .0148	.0234 TO .0425	.0273 TO .0410	.2718 TO .3608	1.873 TO 2.199
STD. DEV.		2294	3442	803	930	2677	643	1.20	.66	.0174	.0268	.0053	.0052	.0204	.0146	.0951	.348

Table VII-12

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 CALIF. CYCLE DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
303-1	FORD	1639	3274	941	663	1670	2142	.95	13.35	.0071	.0138	.0040	.0025	.0074	.0300	.0812	1.791
305-5	FORD	2768	5089	1339	1118	2633	2585	2.42	14.36	.0086	.0157	.0041	.0031	.0085	.0265	.1514	1.410
305-6	FORD	2471	4780	1454	639	2686	2305	2.40	13.41	.0078	.0151	.0046	.0016	.0089	.0241	.1529	1.342
312-1	GMC	2087	4775	1443	1137	1795	2487	2.21	13.57	.0073	.0168	.0065	.0037	.0066	.0291	.1569	1.517
312-4	GMC	2297	5203	1921	1321	1960	2282	2.49	13.33	.0081	.0183	.0068	.0043	.0072	.0267	.1772	1.490
324-4	CHEV	2190	4403	727	1122	2553	2456	2.42	13.37	.0063	.0126	.0021	.0029	.0077	.0233	.1401	1.214
324-5	CHEV	1792	3663	697	1011	1975	2331	2.24	13.05	.0053	.0109	.0021	.0027	.0061	.0228	.1337	1.223
326-3	IHC	2032	4347	465	1518	2364	1388	2.28	13.18	.0069	.0148	.0016	.0048	.0085	.0157	.1573	1.429
326-4	IHC	2109	4258	517	1274	2467	1395	2.25	13.17	.0074	.0150	.0018	.0041	.0091	.0163	.1606	1.476
327-1	CHEV	2908	5651	715	1620	3316	2212	2.80	13.45	.0117	.0228	.0029	.0059	.0140	.0296	.2284	1.724
327-2	CHEV	2502	4989	740	1220	3029	1981	2.63	12.78	.0099	.0198	.0029	.0043	.0126	.0261	.2112	1.609
AVERAGE		2257	4586	1032	1149	2404	2142	2.28	13.37	.0079	.0160	.0036	.0036	.0088	.0246	.1592	1.475
COEF. LIN.		2002 TO 2513	4124 TO 5048	693 TO 1382	945 TO 1353	2057 TO 2751	1869 TO 2415	1.96 TO 2.60	13.10 TO 13.63	.0067 TO .0090	.0137 TO .0182	.0024 TO .0048	.0028 TO .0044	.0071 TO .0104	.0213 TO .0278	.1331 TO .1852	1.352 TO 1.598
STD. DEV.		360	688	520	304	517	406	.48	.39	.0017	.0034	.0018	.0012	.0024	.0049	.0388	.184

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Table VII-13

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 CALIF. CYCLE DATA

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
303-1	FORD	1639	3292	947	666	1679	2154	.96	13.43	.0072	.0139	.0040	.0025	.0074	.0302	.0817	1.802
305-5	FORD	2768	5089	1339	1119	2633	2585	2.42	14.36	.0086	.0157	.0041	.0031	.0085	.0265	.1514	1.410
305-6	FORD	2471	4780	1454	639	2686	2305	2.40	13.41	.0078	.0151	.0046	.0016	.0089	.0241	.1529	1.342
312-1	GMC	2087	4775	1843	1137	1795	2487	2.21	13.57	.0073	.0168	.0065	.0037	.0066	.0291	.1569	1.517
312-4	GMC	2297	5203	1921	1321	1960	2282	2.49	13.33	.0081	.0183	.0068	.0043	.0072	.0267	.1772	1.490
324-4	CHEV	2130	4403	727	1122	2553	2456	2.42	13.37	.0063	.0126	.0021	.0029	.0077	.0233	.1401	1.214
324-5	CHEV	1795	3711	703	1018	1990	2349	2.26	13.16	.0053	.0109	.0021	.0027	.0062	.0230	.1347	1.232
326-3	IHC	2032	4347	465	1518	2364	1388	2.28	13.18	.0069	.0148	.0016	.0048	.0085	.0157	.1573	1.429
326-4	IHC	2109	4259	517	1274	2467	1395	2.25	13.17	.0074	.0150	.0018	.0041	.0091	.0163	.1606	1.476
327-1	CHEV	2938	5651	715	1620	3316	2212	2.80	13.45	.0117	.0228	.0029	.0059	.0140	.0296	.2284	1.724
327-2	CHEV	2533	5051	749	1235	3067	2005	2.67	12.93	.0100	.0200	.0030	.0043	.0128	.0264	.2138	1.629
AVERAGE		2242	4596	1034	1151	2410	2147	2.29	13.40	.0079	.0160	.0036	.0036	.0088	.0246	.1595	1.479
CONF. LIM.		2037 TO 2517	4136 TO 5056	695 TO 1383	947 TO 1355	2061 TO 2758	1873 TO 2420	1.97 TO 2.61	13.15 TO 13.64	.0067 TO .0091	.0137 TO .0183	.0024 TO .0048	.0028 TO .0044	.0072 TO .0105	.0213 TO .0279	.1334 TO .1857	1.354 TO 1.604
STD. DEV.		379	695	519	303	519	406	.48	.37	.0018	.0034	.0018	.0012	.0025	.0049	.0390	.186

Table VII-14

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 DLA ROAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IP PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM* LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
101-3	CHEV	3954	6849	2028	1446	3375	1774	1.28	12.98	.0281	.0487	.0144	.0091	.0252	.0419	.1843	2.935
101-4	CHEV	4352	7433	1756	2168	3509	1812	1.43	12.73	.0310	.0530	.0125	.0142	.0262	.0429	.2066	2.882
109-3	IHC	4156	8036	1269	847	5920	1139	2.76	12.85	.0196	.0378	.0060	.0026	.0292	.0178	.2626	1.921
109-4	IHC	4326	7994	1538	625	5830	1016	2.77	12.49	.0209	.0386	.0074	.0016	.0295	.0163	.2700	1.916
110-1	FORD	4302	8451	1380	690	6382	1204	3.33	12.09	.0349	.0686	.0112	.0031	.0543	.0324	.5469	3.116
110-2	FORD	4113	7987	1091	527	6369	1170	3.30	12.31	.0329	.0640	.0087	.0017	.0535	.0311	.5345	3.133
111-1	FORD	7973	12597	2043	341	10213	1959	2.60	13.11	.0512	.0810	.0131	-.0010	.0688	.0418	.3373	2.677
111-2	FORD	7659	12857	1992	363	10502	1822	2.43	13.09	.0489	.0822	.0127	-.0010	.0704	.0387	.3136	2.656
116-4	FORD	8268	12542	2120	3709	6713	1433	3.63	12.42	.0615	.0934	.0158	.0252	.0524	.0354	.5460	2.935
116-5	FORD	8783	13618	2509	4299	6810	1612	3.37	12.62	.0624	.0968	.0178	.0282	.0508	.0380	.4834	2.848
117-1	CHEV	2872	5360	1482	1586	2292	2052	1.47	13.45	.0205	.0384	.0106	.0106	.0172	.0487	.2133	3.058
117-2	CHEV	2692	4999	1155	1782	2062	2022	1.33	13.38	.0189	.0352	.0081	.0118	.0152	.0473	.1888	2.994
118-2	IHC	1962	4167	1032	1412	1722	1450	3.75	12.40	.0145	.0308	.0076	.0098	.0134	.0356	.5602	2.910
118-3	IHC	1584	3771	1011	1292	1467	1226	3.93	12.26	.0112	.0267	.0071	.0086	.0109	.0288	.5616	2.755
120-3	IHC	5728	10471	2342	2644	5485	1029	3.24	11.97	.0263	.0481	.0108	.0109	.0264	.0157	.3008	1.747
120-4	IHC	5580	10446	2427	2262	5757	1035	3.24	11.76	.0259	.0485	.0113	.0092	.0281	.0160	.3043	1.735
121-2	GMC	3634	6873	1619	2223	3030	2729	1.78	13.28	.0194	.0367	.0086	.0111	.0170	.0484	.1920	2.252
121-3	GMC	3492	6421	1293	2101	3027	2748	1.72	12.50	.0185	.0340	.0068	.0103	.0168	.0483	.1835	2.100
128-1	DODGE	8063	13152	1424	1955	9773	1720	4.50	11.35	.0535	.0872	.0094	.0098	.0680	.0379	.6039	2.392
128-2	DODGE	8496	13839	1538	1983	10318	1514	4.72	11.02	.0577	.0940	.0104	.0100	.0735	.0341	.6477	2.378
AVERAGE		5098	8893	1652	1712	5527	1623	2.83	12.50	.0329	.0572	.0105	.0093	.0373	.0349	.3721	2.567
CONF. LIM.		4014 TO 6183	7345 TO 10441	1430 TO 1874	1220 TO 2205	4139 TO 6915	1383 TO 1862	2.33 TO 3.32	12.20 TO 12.81	.0251 TO .0407	.0460 TO .0684	.0090 TO .0120	.0058 TO .0128	.0272 TO .0475	.0297 TO .0400	.2941 TO .4500	2.345 TO 2.789
STD. DEV.		2317	3307	473	1052	2965	511	1.06	.65	.0167	.0239	.0032	.0075	.0216	.0111	.1665	.473

* NEGATIVE VALUES RESULT FROM CALCULATING MOLECULAR WEIGHT OF AROMATICS BY DIFFERENCE BETWEEN MOLECULAR WEIGHT OF EXHAUST HYDROCARBON AND THAT FOR THE PARAFFINIC AND OLEFINIC COMPONENTS.

Table VII-15

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 DLA ROAD DATA

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM* LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
101-3	CHEV	4097	7097	2101	1498	3497	1838	1.33	13.45	.0292	.0505	.0149	.0095	.0261	.0434	.1910	3.042
101-4	CHEV	4581	7824	1848	2283	3693	1908	1.51	13.40	.0326	.0558	.0132	.0150	.0276	.0451	.2175	3.034
109-3	IHC	4163	8050	1271	849	5930	1141	2.76	12.87	.0196	.0379	.0060	.0026	.0293	.0178	.2630	1.924
109-4	IHC	4440	9204	1579	641	5984	1043	2.84	12.82	.0214	.0396	.0076	.0017	.0303	.0167	.2771	1.967
110-1	FORD	4427	8697	1420	710	6568	1239	3.43	12.44	.0359	.0706	.0115	.0032	.0559	.0334	.5629	3.207
110-2	FORD	4174	8105	1107	535	6463	1187	3.35	12.50	.0334	.0649	.0089	.0018	.0543	.0316	.5424	3.180
111-1	FORD	7973	12597	2043	341	10213	1959	2.60	13.11	.0512	.0810	.0131	-.0010	.0688	.0418	.3373	2.677
111-2	FORD	7659	12857	1992	363	10502	1822	2.43	13.09	.0489	.0822	.0127	-.0010	.0704	.0387	.3136	2.656
116-4	FORD	8268	12542	2120	3709	6713	1433	3.63	12.42	.0615	.0934	.0158	.0252	.0524	.0354	.5460	2.935
116-5	FORD	8783	13618	2509	4299	6810	1612	3.37	12.62	.0624	.0968	.0178	.0282	.0508	.0380	.4834	2.848
117-1	CHEV	2872	5360	1482	1586	2292	2052	1.47	13.45	.0205	.0384	.0106	.0106	.0172	.0487	.2133	3.058
117-2	CHEV	2695	5025	1161	1791	2073	2032	1.33	13.45	.0190	.0354	.0082	.0119	.0153	.0475	.1897	3.009
118-2	IHC	1962	4167	1032	1412	1722	1450	3.75	12.40	.0145	.0308	.0076	.0098	.0134	.0356	.5602	2.910
118-3	IHC	1584	3771	1011	1292	1467	1226	3.93	12.26	.0112	.0267	.0071	.0086	.0109	.0288	.5616	2.755
120-3	IHC	5974	10920	2443	2758	5720	1073	3.38	12.48	.0275	.0502	.0112	.0114	.0276	.0164	.3137	1.822
120-4	IHC	5905	11055	2568	2394	6093	1095	3.43	12.45	.0274	.0514	.0119	.0097	.0297	.0169	.3220	1.836
121-2	GMC	3646	6895	1625	2231	3040	2738	1.78	13.32	.0195	.0368	.0087	.0111	.0170	.0485	.1926	2.259
121-3	GMC	3719	6837	1377	2238	3223	2926	1.83	13.31	.0197	.0362	.0073	.0110	.0179	.0514	.1954	2.236
128-1	DODGE	8292	13526	1464	2011	10051	1769	4.63	11.68	.0550	.0897	.0097	.0101	.0699	.0390	.6211	2.460
128-2	DODGE	9857	14427	1603	2068	10756	1579	4.92	11.49	.0602	.0980	.0109	.0105	.0766	.0356	.6753	2.479
AVERAGE		5203	9078	1687	1750	5640	1656	2.89	12.75	.0335	.0583	.0107	.0095	.0381	.0355	.3790	2.615
CONF. LIM.		4104 TO 6302	7501 TO 10655	1457 TO 1917	1251 TO 2249	4230 TO 7050	1409 TO 1902	2.38 TO 3.39	12.48 TO 13.02	.0256 TO .0414	.0470 TO .0696	.0092 TO .0122	.0060 TO .0130	.0278 TO .0483	.0302 TO .0408	.2999 TO .4580	2.397 TO 2.832
STD. DEV.		2348	3369	491	1066	3011	527	1.08	.58	.0169	.0242	.0032	.0075	.0220	.0113	.1690	.464

* NEGATIVE VALUES RESULT FROM CALCULATING MOLECULAR WEIGHT OF AROMATICS BY DIFFERENCE BETWEEN MOLECULAR WEIGHT OF HYDROCARBON AND THAT FOR THE PARAFFINIC AND OLEFINIC COMPONENTS.

Table VII-16

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 CHASSIS DYN. DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
201-3	CHEV	3578	6981	2019	1767	3195	2219	1.36	13.09	.0273	.0532	.0154	.0123	.0256	.0562	.2095	3.170
201-4	CHEV	3313	6505	1619	2066	2820	2169	1.33	13.28	.0248	.0486	.0121	.0144	.0221	.0538	.2003	3.153
209-1	IHC	3948	7503	1377	767	5359	1156	2.56	12.35	.0237	.0450	.0083	.0030	.0337	.0230	.3099	2.353
209-2	IHC	3768	7155	1391	994	4770	1305	2.64	12.79	.0217	.0413	.0080	.0044	.0289	.0250	.3078	2.342
210-4	FORD	4011	7314	1300	324	5690	2093	1.30	12.46	.0326	.0595	.0106	.0004	.0485	.0565	.2129	3.216
210-5	FORD	3667	7260	1143	491	5626	2163	1.22	12.72	.0302	.0597	.0094	.0018	.0486	.0591	.2034	3.325
211-1	FORD	7242	11280	2170	3810	5291	2565	2.35	12.69	.0469	.0730	.0140	.0230	.0359	.0551	.3076	2.609
211-5	FORD	6479	10773	2312	3672	4788	2709	2.12	13.25	.0411	.0683	.0146	.0218	.0318	.0570	.2717	2.668
216-2	FORD	9092	13921	2244	4445	7231	1665	2.98	12.54	.0615	.0941	.0152	.0277	.0513	.0374	.4071	2.692
216-3	FORD	8579	13033	1915	4219	6899	1780	3.04	12.66	.0567	.0861	.0126	.0257	.0478	.0391	.4058	2.657
217-1	CHEV	2900	5461	1366	1944	2151	1974	1.39	13.12	.0198	.0372	.0093	.0125	.0154	.0446	.1920	2.838
217-2	CHEV	3072	5691	1422	1923	2346	2031	1.24	12.98	.0203	.0376	.0094	.0120	.0163	.0446	.1656	2.727
218-1	IHC	1796	4022	896	1567	1569	1360	3.32	12.03	.0114	.0256	.0056	.0095	.0105	.0287	.4273	2.431
218-3	IHC	2152	4625	1174	1587	1864	1144	3.59	11.84	.0140	.0301	.0076	.0097	.0127	.0247	.4719	2.445
220-3	IHC	4051	7522	1741	1939	3801	1506	2.21	12.50	.0243	.0451	.0107	.0105	.0239	.0300	.2680	2.378
220-4	IHC	3456	6938	1584	1929	3425	1800	2.23	12.82	.0203	.0408	.0093	.0104	.0211	.0351	.2652	2.394
221-1	GMC	2966	5533	1247	1832	2454	3410	1.28	12.62	.0167	.0311	.0070	.0096	.0145	.0637	.1454	2.254
221-2	GMC	2947	5308	1053	1996	2258	3502	1.08	12.61	.0165	.0297	.0059	.0105	.0132	.0650	.1219	2.237
228-1	DODGE	6149	10439	939	1495	8005	2144	3.61	12.49	.0434	.0736	.0066	.0078	.0592	.0502	.5140	2.798
228-2	DODGE	6286	10395	690	1721	7984	1928	3.49	12.07	.0436	.0722	.0048	.0092	.0581	.0444	.4901	2.661
AVERAGE		4472	7882	1481	2024	4376	2031	2.22	12.65	.0298	.0526	.0098	.0118	.0310	.0447	.2949	2.667
CONF. LIM.		3496 TO 5448	6571 TO 9194	1263 TO 1699	1483 TO 2566	3400 TO 5352	1728 TO 2334	1.80 TO 2.64	12.46 TO 12.83	.0231 TO .0366	.0433 TO .0619	.0083 TO .0113	.0083 TO .0153	.0234 TO .0385	.0383 TO .0510	.2387 TO .3510	2.512 TO 2.823
STD. DEV.		2094	2802	466	1156	2085	647	.90	.39	.0144	.0199	.0033	.0076	.0161	.0136	.1200	.332

Table VII-17

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 CHASSIS DYN. DATA

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
201-3	CHEV	3672	7165	2072	1813	3279	2277	1.39	13.44	.0280	.0546	.0158	.0126	.0262	.0576	.2150	3.254
201-4	CHEV	3355	6587	1640	2092	2856	2197	1.34	13.45	.0251	.0492	.0122	.0146	.0224	.0545	.2028	3.193
209-1	IHC	4131	7852	1441	802	5608	1210	2.67	12.93	.0248	.0471	.0086	.0032	.0353	.0241	.3243	2.463
209-2	IHC	3810	7237	1407	1005	4824	1320	2.67	12.93	.0220	.0417	.0081	.0044	.0292	.0253	.3113	2.368
210-4	FORD	4326	7889	1403	349	6137	2257	1.40	13.43	.0352	.0641	.0114	.0004	.0523	.0609	.2296	3.468
210-5	FORD	3880	7681	1209	520	5952	2288	1.29	13.46	.0319	.0632	.0099	.0019	.0514	.0625	.2152	3.518
211-1	FORD	7462	11623	2236	3935	5452	2643	2.42	13.08	.0483	.0752	.0145	.0237	.0370	.0568	.3170	2.688
211-5	FORD	6479	10773	2312	3672	4788	2709	2.12	13.25	.0411	.0683	.0146	.0218	.0318	.0570	.2717	2.668
216-2	FORD	9215	14108	2274	4505	7329	1688	3.02	12.71	.0623	.0954	.0154	.0280	.0520	.0379	.4126	2.729
216-3	FORD	8601	13069	1921	4230	6913	1785	3.05	12.69	.0568	.0864	.0127	.0257	.0480	.0392	.4069	2.664
217-1	CHEV	2968	5590	1399	1990	2201	2020	1.43	13.43	.0202	.0381	.0095	.0128	.0157	.0457	.1965	2.905
217-2	CHEV	3185	5902	1475	1994	2433	2107	1.28	13.46	.0211	.0390	.0097	.0124	.0169	.0463	.1718	2.828
218-1	IHC	1857	4160	916	1621	1623	1407	3.43	12.44	.0118	.0265	.0058	.0098	.0108	.0297	.4419	2.515
218-3	IHC	2228	4788	1216	1643	1930	1184	3.72	12.26	.0145	.0311	.0079	.0101	.0132	.0256	.4885	2.531
220-3	IHC	4255	7901	1871	2037	3993	1581	2.32	13.13	.0255	.0473	.0112	.0110	.0251	.0315	.2815	2.498
220-4	IHC	3544	7113	1624	1978	3511	1846	2.29	13.14	.0208	.0418	.0095	.0106	.0217	.0360	.2719	2.455
221-1	GMC	3160	5895	1329	1952	2614	3634	1.36	13.44	.0178	.0331	.0075	.0103	.0154	.0678	.1550	2.401
221-2	GMC	3149	5672	1126	2133	2413	3742	1.15	13.47	.0176	.0317	.0063	.0113	.0141	.0694	.1303	2.390
228-1	DODGE	6149	10439	939	1495	8005	2144	3.61	12.49	.0434	.0736	.0066	.0078	.0592	.0502	.5140	2.798
228-2	DODGE	6434	10640	706	1761	8172	1973	3.57	12.35	.0447	.0739	.0049	.0095	.0595	.0455	.5017	2.724
AVERAGE		4593	8104	1525	2076	4501	2100	2.28	13.05	.0306	.0541	.0101	.0121	.0319	.0462	.3030	2.753
CONF. LIN.		3621 TO 5564	6807 TO 9400	1307 TO 1743	1532 TO 2620	3514 TO 5488	1775 TO 2425	1.85 TO 2.70	12.85 TO 13.25	.0239 TO .0374	.0448 TO .0634	.0086 TO .0116	.0085 TO .0156	.0242 TO .0396	.0394 TO .0530	.2467 TO .3593	2.589 TO 2.917
STD. DEV.		2075	2770	465	1162	2108	694	.91	.42	.0143	.0199	.0033	.0076	.0165	.0145	.1203	.351

Table VII-18

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 CALIF. CYCLE DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
301-1	CHEV	1868	3718	0	0	0	1986	1.14	12.90	.0113	.0224	.0000	.0224	.0000	.0397	.1395	2.469
301-2	CHEV	2009	3854	0	0	0	2018	1.17	13.11	.0119	.0228	.0000	.0228	.0000	.0397	.1399	2.463
311-2	FORD	4709	7764	2079	2452	3233	2302	3.03	13.11	.0213	.0351	.0094	.0104	.0153	.0345	.2771	1.881
311-3	FORD	6390	10242	2623	2626	4993	2172	2.88	13.03	.0305	.0489	.0125	.0114	.0250	.0344	.2773	1.975
318-4	IHC	1442	3449	906	1130	1413	1648	3.47	12.74	.0071	.0170	.0045	.0052	.0073	.0269	.3457	1.993
320-1	IHC	3084	6202	1382	1675	3145	1606	2.51	12.76	.0138	.0278	.0062	.0068	.0148	.0239	.2272	1.815
320-2	IHC	3216	6275	1580	1409	3286	1522	2.17	12.86	.0142	.0277	.0070	.0055	.0152	.0223	.1943	1.805
321-3	GMC	1901	3938	947	1448	1543	3014	1.52	13.38	.0072	.0149	.0036	.0052	.0061	.0380	.1166	1.612
321-4	GMC	1782	3849	751	1100	1999	2723	1.48	12.97	.0068	.0147	.0029	.0038	.0080	.0346	.1145	1.577
328-3	DODGE	4592	7995	671	1387	5937	2127	3.56	12.43	.0233	.0406	.0034	.0056	.0316	.0359	.3656	2.005
328-4	DODGE	4363	7976	904	1345	5727	1774	3.41	12.34	.0217	.0398	.0045	.0053	.0299	.0293	.3836	1.954
AVERAGE		3214	5932	1076	1324	2843	2081	2.43	12.88	.0154	.0283	.0049	.0095	.0139	.0327	.2347	1.959
CONF. LIM.		2136 TO 4291	4368 TO 7497	538 TO 1614	774 TO 1875	1441 TO 4245	1767 TO 2394	1.76 TO 3.10	12.67 TO 13.08	.0101 TO .0206	.0206 TO .0360	.0024 TO .0074	.0049 TO .0141	.0065 TO .0214	.0285 TO .0368	.1664 TO .3030	1.765 TO 2.153
STD. DEV.		1604	2329	800	819	2087	466	.99	.30	.0078	.0115	.0037	.0069	.0111	.0061	.1017	.289

VII-34

Table VII-19

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 CALIF. CYCLE DATA

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
301-1	CHEV	1752	3886	0	0	0	2075	1.20	13.48	.0118	.0234	.0000	.0234	.0000	.0415	.1458	2.581
301-2	CHEV	2066	3963	0	0	0	2076	1.20	13.48	.0122	.0234	.0000	.0234	.0000	.0408	.1439	2.533
311-2	FORD	4709	7764	2079	2452	3233	2302	3.03	13.11	.0213	.0351	.0094	.0104	.0153	.0345	.2771	1.881
311-3	FORD	6390	10242	2623	2696	4993	2172	2.88	13.03	.0305	.0489	.0125	.0114	.0250	.0344	.2773	1.975
319-4	IHC	1442	3449	906	1130	1413	1648	3.47	12.74	.0071	.0170	.0045	.0052	.0073	.0269	.3457	1.993
320-1	IHC	3143	6320	1408	1707	3205	1636	2.56	13.00	.0141	.0283	.0063	.0069	.0150	.0243	.2315	1.849
320-2	IHC	3292	6424	1618	1442	3364	1558	2.23	13.17	.0145	.0284	.0071	.0057	.0156	.0229	.1989	1.848
321-3	GMC	1993	3944	948	1450	1546	3010	1.52	13.40	.0072	.0150	.0036	.0052	.0061	.0380	.1168	1.614
321-4	GMC	1841	3977	776	1136	2065	2813	1.53	13.40	.0071	.0152	.0030	.0040	.0083	.0358	.1183	1.629
328-3	DODGE	4502	7995	671	1387	5037	2127	3.56	12.43	.0233	.0406	.0034	.0056	.0316	.0359	.3656	2.005
328-4	DODGE	4345	7976	904	1345	5727	1774	3.81	12.34	.0217	.0398	.0045	.0053	.0299	.0293	.3836	1.954
AVERAGE		3244	5994	1094	1334	2862	2109	2.45	13.05	.0155	.0286	.0049	.0097	.0140	.0331	.2368	1.987
CONF. LIM.		2178 TO 4311	4452 TO 7536	545 TO 1624	793 TO 1885	1460 TO 4264	1792 TO 2425	1.80 TO 3.11	12.78 TO 13.32	.0103 TO .0207	.0211 TO .0362	.0024 TO .0075	.0049 TO .0145	.0066 TO .0214	.0288 TO .0374	.1696 TO .3040	1.778 TO 2.197
STD. DEV.		1597	2296	802	820	2087	471	.98	.40	.0077	.0113	.0038	.0072	.0110	.0064	.1000	.311

Table VII-20

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 DLA ROAD DATA

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
104-1	GMC	305 V-6	7500	1.79	13.29	12.84	13.07	13.23	81	47572	96.0	91.9	20.0	14.0
104-2	GMC	305 V-6	7500	1.95	13.48	13.14	13.31	13.43	66	47597	97.2	92.7	21.4	16.3
108-4	CHEV	292 I-6	7500	1.86	13.06	13.28	13.17	13.09	74	8482	93.7	90.0	20.1	-7.0
108-5	CHEV	292 I-6	7500	1.57	12.97	13.32	13.15	13.02	77	8503	92.9	89.3	21.6	-11.7
113-1	FORD	352 V-8	10000	1.80	12.90	13.33	13.12	12.97	88	40086	119.6	115.1	18.1	-11.7
113-2	FORD	352 V-8	10000	1.37	12.82	12.97	12.89	12.84	94	40111	118.7	114.7	18.1	-4.7
114-1	FORD	300 I-6	7500	1.30	13.02	13.17	13.10	13.04	87	5481	98.6	94.8	18.6	-4.6
114-2	FORD	300 I-6	7500	1.52	12.96	12.90	12.93	12.95	87	5505	103.6	99.8	18.7	1.7
122-2	IHC	266 V-8	7300	1.71	12.96	13.34	13.15	13.02	102	25630	85.9	82.7	18.8	-12.6
122-4	IHC	266 V-8	7300	1.70	12.95	13.16	13.05	12.98	99	25667	91.4	87.9	18.5	-6.3
123-3	DODGE	318 V-8	7500	2.05	12.45	12.54	12.50	12.47	94	12276	96.4	93.9	18.0	-2.5
123-4	DODGE	318 V-8	7500	2.27	12.39	12.77	12.58	12.47	89	12307	88.8	86.5	20.4	-13.1
125-2	FORD	240 I-6	7500	1.74	12.29	12.99	12.64	12.44	92	14673	90.0	87.8	18.5	-25.1
125-3	FORD	240 I-6	7500	1.62	12.47	12.70	12.58	12.52	99	14695	88.2	85.8	19.4	-7.3
129-2	CHEV	250 I-6	10000	1.54	12.60	12.78	12.69	12.63	100	21192	95.5	92.6	18.6	-5.6
129-3	CHEV	250 I-6	10000	1.98	12.55	12.79	12.67	12.60	102	21210	92.9	90.2	18.8	-9.9
130-4	CHEV	250 I-6	7500	1.81	13.26	13.18	13.22	13.25	93	13447	88.8	85.0	19.0	2.8
130-5	CHEV	250 I-6	7500	1.81	13.26	13.18	13.22	13.25	93	13468	88.8	85.0	19.0	2.8
131-2	CHEV	283 V-8	7500	2.50	12.53	11.80	12.16	12.36	94	16955	66.9	65.4	18.8	25.5
131-3	CHEV	283 V-8	7500	2.35	12.55	11.74	12.15	12.37	97	16978	68.8	67.2	17.9	27.2
AVERAGE				1.81	12.84	12.90	12.87	12.85	90	20591	93.1	89.9	19.1	-1.6
CONF. LIM.				1.67 TO 1.96	12.68 TO 13.00	12.69 TO 13.11	12.70 TO 13.03	12.69 TO 13.00	85 TO 94	14373 TO 26810	87.3 TO 99.0	84.4 TO 95.5	18.6 TO 19.6	-7.8 TO 4.6
STD. DEV.				.31	.34	.45	.35	.34	9	13287	12.5	11.8	1.1	13.3

Table VII-21

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 CHASSIS DYN. DATA

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
204-2	GMC	305 V-6	7500	2.08	13.62	13.57	13.60	13.62	78	47647	94.8	90.0	22.4	1.0
204-5	GMC	305 V-6	7500	2.49	13.38	14.53	13.95	13.41	90	47683	95.0	90.6	21.3	-16.2
208-4	CHEV	292 I-6	7500	1.99	12.85	12.59	12.72	12.80	80	8443	89.8	86.8	20.5	8.5
208-5	CHEV	292 I-6	7500	2.73	12.53	12.65	12.59	12.56	93	8452	91.7	89.1	20.0	-4.4
213-2	FORD	352 V-8	10000	2.28	13.15	13.10	13.12	13.14	70	40135	108.5	104.0	20.3	1.9
213-8	FORD	352 V-8	10000	2.53	13.13	13.03	13.08	13.12	64	40185	112.9	108.3	20.0	3.7
214-2	FORD	300 I-6	7500	1.54	12.99	13.27	13.13	13.03	74	5538	100.4	96.5	20.1	-12.6
214-3	FORD	300 I-6	7500	1.53	13.02	13.37	13.20	13.07	72	5546	99.5	95.6	19.8	-16.0
222-1	IHC	266 V-8	7300	2.31	13.42	13.39	13.41	13.42	85	25690	92.8	88.5	20.5	1.1
222-2	IHC	266 V-8	7300	2.25	13.39	13.36	13.37	13.38	82	25700	96.8	92.4	20.6	1.0
223-1	DODGE	318 V-8	7500	2.74	13.25	12.90	13.08	13.20	84	12330	91.1	87.3	20.5	11.8
223-3	DODGE	318 V-8	7500	2.75	13.34	13.17	13.25	13.32	82	12345	93.7	89.6	20.4	5.9
225-1	FORD	240 I-6	7500	1.57	12.50	12.72	12.61	12.55	84	14718	92.8	90.2	20.7	-8.3
225-2	FORD	240 I-6	7500	1.45	12.64	12.87	12.76	12.68	81	14722	92.6	89.7	20.6	-8.6
229-2	CHEV	250 I-6	10000	1.78	12.12	12.52	12.32	12.21	94	21244	81.8	80.2	20.2	-18.4
229-3	CHEV	250 I-6	10000	1.58	12.21	12.29	12.25	12.23	94	21237	81.0	79.4	21.2	-3.2
230-3	CHEV	250 I-6	7500	2.05	13.46	13.36	13.41	13.45	80	13482	91.1	86.8	20.8	3.2
230-4	CHEV	250 I-6	7500	2.08	13.50	13.15	13.32	13.44	80	13488	90.1	85.9	20.7	17.0
231-2	CHEV	283 V-8	7500	1.92	12.52	12.17	12.35	12.45	75	17004	73.8	72.0	20.7	13.6
231-3	CHEV	283 V-8	7500	1.83	12.49	12.24	12.36	12.43	73	17010	71.0	69.2	20.8	10.2
AVERAGE				2.04	12.98	13.01	12.99	12.98	80	20629	92.1	88.6	20.6	-.4
CONF. LIM.				1.83 TO 2.26	12.76 TO 13.19	12.76 TO 13.27	12.77 TO 13.22	12.77 TO 13.19	76 TO 84	14402 TO 26857	87.4 TO 96.7	84.3 TO 92.9	20.3 TO 20.9	-5.3 TO 4.4
STD. DEV.				.46	.46	.55	.48	.45	8	13307	10.0	9.1	.6	10.4

Table VII-22

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 CALIF. CYCLE DATA

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
304-6	GMC	305 V-6	7500	1.05	13.71	11.54	12.63	13.76	90	47699	83.7	79.3	38.9	-13.9
304-7	GMC	305 V-6	7500	1.10	13.72	67.19	40.45	13.75	88	47711	70.4	66.7	37.6	-9.3
308-6	CHEV	292 I-6	7500	1.12	13.44	15.58	14.51	13.47	88	8455	92.5	88.1	33.0	-9.6
308-7	CHEV	292 I-6	7500	1.11	13.47	14.13	13.80	13.49	90	8465	96.4	91.8	33.1	-5.7
313-5	FORD	352 V-8	10000	1.30	13.92	14.34	14.13	13.93	68	40159	122.2	115.4	30.2	-2.0
313-6	FORD	352 V-8	10000	1.50	13.91	14.77	14.34	13.93	65	40168	121.2	114.4	30.3	-3.3
322-3	IHC	266 V-8	7300	1.05	13.49	13.72	13.60	13.50	85	25714	86.7	82.5	33.7	-3.8
322-4	IHC	266 V-8	7300	1.13	13.49	13.78	13.63	13.50	86	25725	87.2	83.0	33.8	-4.3
325-3	FORD	240 I-6	7500	1.01	13.12	13.39	13.25	13.16	81	14726	89.6	85.9	30.8	-8.3
325-4	FORD	240 I-6	7500	.91	13.14	13.38	13.26	13.17	82	14736	89.5	85.8	30.8	-7.5
331-1	CHEV	283 V-8	7500	1.47	13.25	13.01	13.13	13.22	78	16895	77.0	73.7	36.2	8.0
331-2	CHEV	283 V-8	7500	1.33	13.35	13.37	13.36	13.35	78	16907	78.1	74.6	36.2	-.6
AVERAGE				1.17	13.50	18.18	15.84	13.52	81	25613	91.2	86.8	33.7	-5.0
CONF. LIM.				1.06 TO 1.29	13.33 TO 13.67	8.36 TO 28.01	10.91 TO 20.78	13.35 TO 13.69	76 TO 86	16273 TO 34952	81.1 TO 101.3	77.3 TO 96.2	31.8 TO 35.6	-8.6 TO -1.5
STD. DEV.				.18	.27	15.46	7.77	.27	8	14698	15.9	14.8	3.0	5.5

Table VII-23

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 DLA ROAD DATA

RUN NO.	MAKE	ENGINE TYPE	GVW LR	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
103-5	FORD	330 V-8	20000	2.23	13.64	13.19	13.41	13.59	62	27877	170.5	162.1	19.2	14.8
103-6	FORD	330 V-8	20000	2.29	13.72	13.20	13.46	13.66	67	28098	169.5	160.8	19.4	15.0
105-1	FORD	240 I-6	18000	1.63	13.04	13.38	13.21	13.09	65	21309	112.3	107.9	19.2	-14.0
105-2	FORD	240 I-6	18000	1.49	12.98	13.04	13.01	12.99	70	21331	122.3	117.7	19.1	-2.1
106-2	FORD	330 V-8	20000	2.13	13.41	13.06	13.24	13.38	67	36614	170.5	162.7	19.4	10.7
106-3	FORD	330 V-8	20000	2.26	13.41	12.99	13.20	13.36	64	36636	186.1	177.7	19.2	11.8
107-1	CHEV	292 I-6	19500	1.63	13.15	13.09	13.12	13.14	61	4383	133.7	128.2	19.4	2.0
107-2	CHEV	292 I-6	19500	1.57	13.12	13.25	13.19	13.14	67	4407	132.2	126.9	19.0	-5.1
112-1	GMC	305 V-6	19500	1.45	12.84	13.13	12.98	12.89	85	39167	135.3	130.5	19.4	-10.6
112-2	GMC	305 V-6	19500	1.44	12.85	13.11	12.98	12.90	90	39189	136.3	131.4	19.6	-9.2
115-2	CHEV	250 I-6	16000	.74	11.89	12.14	12.01	11.95	80	21563	125.3	123.7	19.4	-8.1
115-3	CHEV	250 I-6	16000	.90	12.06	12.15	12.10	12.08	74	21781	124.9	123.0	19.0	-2.9
119-1	FORD	330 V-8	20000	2.09	13.47	13.16	13.31	13.42	118	28795	151.0	144.0	18.9	12.5
119-2	FORD	330 V-8	20000	2.31	13.60	13.10	13.35	13.52	109	28821	147.5	140.4	19.7	20.6
124-1	CHEV	292 I-6	19500	1.46	12.57	12.62	12.59	12.58	92	40706	120.4	117.0	20.1	-1.7
124-2	CHEV	292 I-6	19500	1.28	12.61	12.68	12.65	12.62	91	40722	112.1	108.8	22.9	-2.8
126-1	IHC	304 V-8	20000	1.46	13.28	12.93	13.11	13.24	104	35137	124.6	119.2	18.9	11.0
126-2	IHC	304 V-8	20000	1.33	13.29	13.02	13.15	13.25	104	35160	122.4	117.1	19.5	8.6
127-1	CHEV	292 I-6	19500	1.38	12.49	12.78	12.64	12.55	85	28751	133.4	129.7	19.9	-10.2
127-2	CHEV	292 I-6	19500	1.33	12.60	12.72	12.66	12.62	97	28738	136.1	132.1	20.0	-4.5
AVERAGE				1.62	13.00	12.94	12.97	13.00	82	28459	130.3	133.0	19.5	1.8
CONF. LIM.				1.41 TO 1.83	12.76 TO 13.24	12.78 TO 13.09	12.78 TO 13.16	12.78 TO 13.22	74 TO 90	23531 TO 33386	128.5 TO 148.2	124.0 TO 142.1	19.1 TO 20.0	-3.1 TO 6.6
STD. DEV.				.46	.51	.33	.41	.48	17	10528	21.0	19.3	.9	10.4

Table VII-24

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 CHASSIS DYN. DATA

RUN NO.	MAKE	ENGINE TYPE	GVW LB	02 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
203-3	FORD	330 V-8	20000	3.41	13.65	13.08	13.36	13.55	80	2861	165.5	157.4	19.1	21.5
203-4	FORD	330 V-8	20000	2.73	13.80	13.16	13.48	13.73	82	2866	171.8	162.8	19.0	16.5
205-3	FORD	240 I-6	18000	1.36	12.89	12.68	12.79	12.86	83	21379	138.1	133.3	20.2	5.5
205-4	FORD	240 I-6	18000	1.29	12.90	12.65	12.77	12.85	78	21382	136.5	131.8	20.1	6.4
206-3	FORD	330 V-8	20000	2.34	13.67	13.15	13.41	13.61	76	36681	186.4	177.1	19.5	15.8
206-4	FORD	330 V-8	20000	2.41	13.75	13.10	13.43	13.66	71	36686	191.6	181.9	19.5	21.2
207-2	CHEV	292 I-6	19500	1.47	12.93	12.80	12.86	12.91	80	4444	144.5	139.3	19.8	4.4
207-3	CHEV	292 I-6	19500	1.36	12.85	12.90	12.87	12.86	80	4447	145.3	140.3	19.7	-1.7
212-2	GMC	305 V-6	19500	1.33	13.53	13.33	13.43	13.51	94	39242	149.7	142.5	20.1	5.1
212-3	GMC	305 V-6	19500	1.68	13.65	13.41	13.53	13.64	85	39244	144.7	137.4	19.8	5.3
215-1	CHEV	250 I-6	16000	1.33	12.23	12.32	12.28	12.25	81	21800	126.5	123.9	20.1	-2.8
215-4	CHEV	250 I-6	16000	1.18	12.21	12.46	12.34	12.27	80	21815	126.3	123.7	20.0	-8.6
219-1	FORD	330 V-8	20000	2.34	13.51	13.14	13.32	13.45	112	28845	151.7	144.6	20.0	16.1
219-2	FORD	330 V-8	20000	1.95	13.59	13.20	13.40	13.55	111	28851	149.5	142.2	20.2	12.3
224-1	CHEV	292 I-6	19500	1.72	12.74	13.14	12.94	12.81	99	40745	111.1	107.3	19.8	-15.6
224-2	CHEV	292 I-6	19500	1.55	12.71	12.61	12.66	12.69	100	40755	111.9	108.5	19.8	3.4
226-1	IHC	304 V-8	20000	1.79	13.48	13.16	13.32	13.43	109	35193	146.0	139.2	20.2	11.8
226-2	IHC	304 V-8	20000	2.10	13.52	13.13	13.32	13.45	110	35198	142.4	135.7	19.9	15.9
227-3	CHEV	292 I-6	19500	2.03	12.73	12.69	12.71	12.72	100	28783	148.9	144.2	19.2	1.4
227-4	CHEV	292 I-6	19500	2.08	12.85	12.83	12.84	12.84	95	28785	146.2	141.1	18.9	.6
AVERAGE				1.87	13.16	12.95	13.05	13.13	90	26000	146.7	140.7	19.7	6.7
CONF. LIM.				1.60 TO 2.14	12.92 TO 13.40	12.81 TO 13.09	12.87 TO 13.24	12.91 TO 13.35	84 TO 96	19839 TO 32161	137.0 TO 156.4	131.9 TO 149.5	19.5 TO 19.9	2.1 TO 11.3
STD. DEV.				.57	.51	.30	.39	.47	13	13164	20.7	18.8	.4	9.8

Table VII-25

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 CALIF. CYCLE DATA

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
303-1	FORD	330 V-8	20000	2.53	14.44	14.69	14.56	14.43	78	28384	125.6	117.5	30.7	1.8
305-5	FORD	240 I-6	18000	2.04	13.43	12.15	12.79	13.51	85	21387	90.3	86.0	30.7	-40.1
305-6	FORD	240 I-6	18000	1.13	13.44	13.92	13.68	13.46	79	21408	92.0	87.6	30.9	-8.5
312-1	GMC	305 V-6	19500	1.09	13.52	14.65	14.08	13.54	90	39230	102.9	97.9	31.5	-10.3
312-4	GMC	305 V-6	19500	1.14	13.40	13.73	13.57	13.42	90	39268	102.6	97.8	31.4	-6.2
324-4	CHEV	292 I-6	19500	1.56	13.43	13.81	13.62	13.45	103	40765	83.4	79.5	30.8	-8.6
324-5	CHEV	292 I-6	19500	1.57	13.50	13.41	13.46	13.50	94	40780	86.1	82.0	31.0	2.3
326-3	IHC	304 V-8	20000	1.23	13.49	13.52	13.50	13.49	96	35202	99.7	95.0	32.6	-.6
326-4	IHC	304 V-8	20000	1.24	13.50	13.51	13.51	13.50	102	35213	103.0	98.1	32.7	-.3
327-1	CHEV	292 I-6	19500	1.41	13.28	13.66	13.47	13.32	100	28760	117.4	112.2	26.6	-12.1
327-2	CHEV	292 I-6	19500	1.55	13.35	13.23	13.29	13.33	90	28769	115.4	110.3	27.3	3.2
AVERAGE				1.50	13.53	13.66	13.59	13.54	91	32651	101.7	96.7	30.6	-7.2
COEF. LIM.				1.20 TO 1.80	13.32 TO 13.73	13.20 TO 14.12	13.30 TO 13.89	13.34 TO 13.74	85 TO 97	27743 TO 37559	92.6 TO 110.7	88.3 TO 105.1	29.3 TO 31.9	-15.4 TO 1.0
STD. DEV.				.44	.31	.69	.44	.30	8	7305	13.5	12.5	1.9	12.2

Table VII-26

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 DLA ROAD DATA

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
101-3	CHEV	366 V-8	30000	2.14	14.07	13.36	13.72	14.03	72	7740	210.1	197.9	20.7	8.2
101-4	CHEV	366 V-8	30000	2.00	13.95	13.25	13.60	13.89	72	7765	209.8	198.2	20.4	11.5
109-3	IHC	304 V-8	21000	1.02	13.30	13.28	13.29	13.29	88	40617	136.9	130.9	20.6	.5
109-4	IHC	304 V-8	21000	.93	13.29	13.06	13.18	13.26	85	40639	140.4	134.3	20.3	7.6
110-1	FORD	477 V-8	41000	1.30	13.07	12.81	12.94	13.03	110	35174	234.6	225.6	20.2	6.9
110-2	FORD	477 V-8	41000	1.48	13.08	12.95	13.01	13.06	108	35197	231.8	222.8	20.9	3.5
111-1	FORD	361 V-8	25500	1.39	13.36	13.45	13.40	13.37	98	5099	187.2	178.7	20.0	-2.5
111-2	FORD	361 V-8	25500	1.17	13.43	13.44	13.43	13.43	100	5122	186.4	177.7	20.1	-.2
116-4	FORD	391 V-8	50000	1.22	12.95	13.01	12.98	12.96	117	51933	214.9	207.0	18.9	-1.7
116-5	FORD	391 V-8	50000	1.13	13.05	13.14	13.10	13.07	132	52167	205.6	197.6	20.2	-2.5
117-1	CHEV	366 V-8	32000	1.58	13.91	14.03	13.97	13.92	115	12371	210.7	199.0	20.6	-.7
117-2	CHEV	366 V-8	32000	1.50	14.03	13.84	13.94	14.03	119	12393	207.9	195.9	20.7	1.3
118-2	IHC	450 I-6	50000	.72	12.90	13.00	12.95	12.92	125	34825	213.2	205.5	20.2	-2.8
118-3	IHC	450 I-6	50000	.68	12.83	12.92	12.87	12.84	145	34850	203.7	196.7	20.2	-2.4
120-3	IHC	345 V-8	24000	1.35	13.11	12.73	12.92	13.05	110	10847	133.0	127.8	20.9	13.5
120-4	IHC	345 V-8	24000	1.26	13.10	12.60	12.85	13.03	114	10870	134.3	129.2	20.1	14.9
121-2	GMC	351 V-6	26000	2.70	13.72	13.65	13.68	13.72	91	130000	156.6	148.4	19.9	1.0
121-3	GMC	351 V-6	26000	2.54	13.76	13.18	13.47	13.69	92	130050	155.1	147.1	19.6	16.6
128-1	DODGE	361 V-8	25000	1.24	12.60	12.35	12.47	12.55	84	34348	189.7	184.5	22.2	7.1
128-2	DODGE	361 V-8	25000	1.12	12.51	12.14	12.33	12.43	79	34370	193.7	188.9	21.6	10.0
AVERAGE				1.42	13.30	13.11	13.21	13.28	102	36318	187.8	179.7	20.4	4.5
CONF. LIM.				1.17 TO 1.68	13.08 TO 13.52	12.89 TO 13.33	13.00 TO 13.41	13.06 TO 13.50	93 TO 112	19640 TO 52997	172.3 TO 203.3	164.8 TO 194.5	20.1 TO 20.7	1.5 TO 7.5
STD. DEV.				.54	.47	.47	.45	.47	20	35637	33.1	31.7	.7	6.4

Table VII-27

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 CHASSIS DYN. DATA

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
201-3	CHEV	366 V-8	30000	1.94	14.01	13.44	13.72	13.98	79	7723	224.8	212.0	19.3	6.8
201-4	CHEV	366 V-8	30000	2.25	14.03	13.65	13.84	14.02	84	7732	220.6	207.9	19.2	3.5
209-1	IHC	304 V-8	21000	1.85	13.38	12.97	13.17	13.33	96	40672	174.6	166.8	19.5	11.7
209-2	IHC	304 V-8	21000	2.14	13.34	13.24	13.29	13.33	96	40677	167.8	160.3	19.2	3.3
210-4	FORD	477 V-8	41000	2.24	14.06	13.17	13.62	13.97	94	35269	239.6	226.0	19.5	16.4
210-5	FORD	477 V-8	41000	2.02	14.13	13.25	13.69	14.06	89	35272	243.0	228.8	19.6	12.7
211-1	FORD	361 V-8	25500	1.44	13.46	13.24	13.35	13.43	111	5149	188.7	179.9	20.1	7.5
211-5	FORD	361 V-8	25500	.94	13.55	13.61	13.58	13.56	112	5182	185.3	176.2	19.6	-.9
216-2	FORD	391 V-8	50000	1.19	13.21	13.09	13.15	13.19	111	5247	196.2	188.0	19.5	3.7
216-3	FORD	391 V-8	50000	1.27	13.18	13.16	13.17	13.18	113	5251	191.8	183.8	19.7	.8
217-1	CHEV	366 V-8	32000	1.84	13.98	13.46	13.72	13.95	99	12419	200.8	189.4	20.1	5.6
217-2	CHEV	366 V-8	32000	1.86	14.11	13.36	13.74	14.07	105	12424	195.3	183.9	19.8	8.7
218-1	IHC	450 I-6	50000	1.53	13.07	12.77	12.92	13.03	142	34900	184.0	177.0	20.3	7.8
218-3	IHC	450 I-6	50000	1.58	12.96	12.65	12.81	12.91	128	34910	187.5	180.8	20.2	8.2
220-3	IHC	345 V-8	24000	1.58	13.52	13.18	13.35	13.47	120	10922	174.9	166.6	19.7	12.6
220-4	IHC	345 V-8	24000	1.45	13.51	13.28	13.39	13.49	107	10930	171.7	163.5	19.9	7.4
221-1	GMC	351 V-6	26000	2.59	14.07	13.21	13.64	14.00	101	130075	165.9	156.4	20.4	16.0
221-2	GMC	351 V-6	26000	2.54	14.28	15.30	14.79	14.20	85	130100	165.4	155.4	20.7	16.7
228-1	DODGE	361 V-8	25000	.92	12.96	13.06	13.01	12.97	89	34399	203.7	196.1	19.4	-3.1
228-2	DODGE	361 V-8	25000	1.26	13.00	12.79	12.90	12.97	89	34403	200.5	193.1	18.7	6.2
AVERAGE				1.72	13.59	13.29	13.44	13.56	102	31682	194.1	184.6	19.7	7.6
CONF. LIM.				1.49 TO 1.95	13.38 TO 13.80	13.04 TO 13.55	13.23 TO 13.65	13.35 TO 13.76	95 TO 109	14657 TO 48708	183.3 TO 204.9	174.6 TO 194.6	19.5 TO 19.9	5.0 TO 10.2
STD. DEV.				.49	.45	.54	.45	.44	15	36378	23.1	21.4	.5	5.6

Table VII-28

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 CALIF. CYCLE DATA

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
301-1	CHEV	366 V-8	30000	2.17	14.21	15.20	14.70	14.15	64	4471	178.4	167.7	27.0	12.0
301-2	CHEV	366 V-8	30000	2.07	14.18	15.06	14.62	14.15	71	4479	175.0	164.5	27.0	7.9
311-2	FORD	361 V-8	22500	1.01	13.19	13.45	13.32	13.22	100	5150	131.2	125.6	28.9	-10.7
311-3	FORD	361 V-8	22500	1.02	13.25	13.40	13.32	13.27	106	5159	138.7	132.6	28.8	-5.3
318-4	IHC	450 I-6	50000	.85	13.01	13.21	13.11	13.04	120	34925	142.4	136.9	37.9	-6.8
320-1	IHC	345 V-8	24000	1.45	13.40	13.26	13.33	13.38	100	10898	130.4	124.5	30.4	5.4
320-2	IHC	345 V-8	24000	1.32	13.53	13.30	13.42	13.51	93	10910	129.1	122.9	30.4	6.8
321-3	GMC	351 V-6	26000	1.82	13.88	13.83	13.86	13.88	85	130125	111.6	105.5	32.8	.6
321-4	GMC	351 V-6	26000	1.93	13.91	13.36	13.63	13.88	81	130140	112.7	106.5	32.8	11.1
328-3	DODGE	361 V-8	25000	.92	12.98	13.02	13.00	12.98	83	34408	146.7	141.2	29.3	-1.6
328-4	DODGE	361 V-8	25000	1.02	12.88	12.96	12.92	12.89	85	34417	143.7	138.6	29.4	-3.1
AVERAGE				1.42	13.49	13.64	13.57	13.49	89	36825	140.0	133.3	30.4	1.5
CONF. LIM.				1.08 TO 1.75	13.17 TO 13.82	13.12 TO 14.16	13.16 TO 13.97	13.18 TO 13.80	79 TO 100	4699 TO 68951	125.6 TO 154.4	119.9 TO 146.7	28.3 TO 32.5	-3.6 TO 6.6
STD. DEV.				.50	.48	.77	.60	.46	16	47823	21.5	20.0	3.1	7.6

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Table VII-29

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 DLA ROAD DATA

MODE VARIABLES

RUN NO.	TRUCK MAKE	PCT. TIME IDL.	PCT. TIME CRU.	PCT. TIME ACC.	PCT. TIME DEC.	PCT. CHNG. IDL. TO ACC.	PCT. CHNG. CRU. TO ACC.	PCT. CHNG. CRU. TO DEC.	PCT. CHNG. ACC. TO CRU.	PCT. CHNG. ACC. TO DEC.	PCT. CHNG. DEC. TO IDL.	PCT. CHNG. DEC. TO CRU.	PCT. CHNG. DEC. TO ACC.	PCT. TIME FULL POWER	PCT. TIME PART POWER	PCT. TIME DRIVEN POWER	PCT. TIME CLOSED POWER	AVG RPM
02-1	FORD	16.59	21.59	30.58	31.25	6.56	5.41	7.34	6.56	33.20	7.34	5.79	27.41	14.6	34.2	16.3	34.8	1280
02-3	FORD	18.07	24.81	28.11	29.02	6.75	5.56	9.92	7.54	29.76	6.75	7.94	25.40	11.8	37.2	15.2	35.9	1294
06-1	GMC	19.55	18.60	30.96	30.89	7.98	2.94	5.88	4.62	36.13	8.40	4.20	29.83	9.8	43.6	8.5	38.1	1129
06-2	GMC	19.95	21.78	28.48	29.79	7.53	2.93	7.95	6.28	33.47	7.53	5.02	28.87	9.2	43.4	8.9	38.6	1110
13-1	FORD	16.01	18.35	32.89	32.75	7.14	3.36	3.36	3.36	39.50	7.56	3.36	31.93	23.8	31.8	8.8	35.5	1279
13-2	FORD	18.70	18.51	39.92	31.86	7.60	4.00	3.20	2.80	38.00	8.40	3.60	29.20	21.5	31.6	9.6	37.2	1231
16-2	CHEV	17.97	16.68	29.95	35.40	8.47	1.69	2.97	2.12	41.10	8.47	2.97	32.63	13.5	36.7	5.4	44.4	1290
16-8	CHEV	15.44	16.42	31.10	37.04	7.69	2.26	4.07	2.26	39.82	8.14	4.07	31.67	11.7	39.9	5.2	43.2	1279
27-8	CHEV	17.06	15.17	30.01	37.76	10.13	1.32	3.96	2.64	39.21	10.57	2.64	29.96	11.9	36.6	4.8	46.7	1267
27-9	CHEV	22.01	19.16	27.45	31.39	10.55	2.29	3.21	3.21	38.53	11.01	2.29	28.90	9.4	37.7	5.1	47.8	1276
38-1	DODGE	21.03	18.75	31.13	29.09	8.13	1.77	3.89	3.53	38.87	8.13	2.12	32.86	12.4	36.3	10.1	41.2	1278
38-2	DODGE	16.54	21.39	29.53	32.55	6.91	3.66	3.66	2.03	38.21	6.91	5.28	30.49	12.7	38.5	10.7	38.1	1127
39-2	FORD	17.54	23.57	26.79	32.10	7.26	0.43	3.85	1.28	41.45	7.26	2.99	35.04	12.3	39.2	5.2	42.7	1185
39-3	FORD	16.46	20.30	29.07	34.17	7.06	0.78	3.92	2.35	40.78	7.06	2.75	34.90	14.2	35.2	7.3	43.1	1189
40-8	CHEV	20.56	19.57	28.83	31.05	9.05	1.81	5.43	0.45	38.91	9.50	6.79	28.05	12.8	39.1	4.6	43.4	1266
40-9	CHEV	17.95	20.30	29.44	32.31	7.84	1.96	3.43	1.47	40.69	8.33	3.92	32.35	14.2	38.9	4.8	42.1	1294
43-1	IHC	16.78	19.27	32.74	31.21	6.97	2.87	4.92	4.92	37.30	6.97	2.87	32.79	11.7	38.6	9.4	40.2	1109
43-2	IHC	15.37	19.73	32.51	32.38	8.33	1.89	3.79	1.87	39.77	8.33	3.79	31.82	12.6	38.7	7.8	40.8	1099
46-1	CHEV	17.25	19.47	29.04	34.23	7.66	2.39	6.22	4.31	36.36	7.66	4.31	30.62	12.2	40.7	5.9	41.1	1252
46-2	CHEV	18.66	18.86	30.09	32.39	10.04	2.51	3.77	2.93	37.66	10.46	3.35	28.45	13.1	40.2	4.7	42.0	1244
AVERAGE		17.97	19.61	30.43	32.43	7.98	2.59	4.74	3.33	37.94	6.74	4.00	30.66	13.3	37.9	7.9	40.8	1213
CONF. LIM.		17.10 TO 18.85	18.54 TO 20.68	29.13 TO 31.73	31.34 TO 33.52	7.44 TO 8.52	1.97 TO 3.21	3.87 TO 5.61	2.45 TO 4.20	36.55 TO 39.32	5.48 TO 8.00	3.29 TO 4.71	29.50 TO 31.82	11.6 TO 14.9	36.4 TO 39.4	6.3 TO 9.5	39.2 TO 42.5	1177 TO 1250
STD. DEV.		1.86	2.29	2.78	2.33	1.15	1.33	1.86	1.87	2.96	2.70	1.51	2.48	3.5	3.2	3.4	3.6	77

Table VII-30

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 CHASSIS DYN. DATA

MODE VARIABLES

RUN NO.	TRUCK MAKE	PCT. TIME IDL.	PCT. TIME CRU.	PCT. TIME ACC.	PCT. TIME DEC.	PCT. CHNG. IDL. TO ACC.	PCT. CHNG. CRU. TO ACC.	PCT. CHNG. CRU. TO DEC.	PCT. CHNG. ACC. TO CRU.	PCT. CHNG. ACC. TO DEC.	PCT. CHNG. DEC. TO IDL.	PCT. CHNG. DEC. TO CRU.	PCT. CHNG. DEC. TO ACC.	PCT. TIME FULL POWER	PCT. TIME PART POWER	PCT. TIME DRIVEN POWER	PCT. TIME CLOSED POWER	AVG RPM
213-1	FORD	21.85	20.50	21.62	36.04	3.45	3.45	6.90	6.90	36.21	3.45	3.45	36.21	13.9	27.2	4.9	43.9	1288
213-2	FORD	22.70	21.51	21.51	34.28	8.33	0.00	4.17	4.17	39.58	8.33	0.00	36.36	13.0	25.2	4.2	57.5	1298
204-1	GMC	17.13	18.70	27.95	36.22	6.15	0.00	6.15	4.62	38.46	6.15	1.54	36.92	5.3	45.6	2.6	46.6	1135
204-1	GMC	17.93	18.57	31.53	31.97	7.02	0.00	7.02	7.02	36.84	5.26	0.00	36.84	5.4	48.9	3.0	42.7	1171
225-1	FORD	17.88	15.93	34.34	31.86	7.14	0.00	7.14	7.14	36.71	7.14	0.00	35.71	31.6	21.6	2.7	44.2	1286
225-1	FORD	17.14	16.25	33.57	33.04	7.02	0.00	7.02	7.02	36.84	5.26	0.00	36.84	32.5	20.8	3.2	43.6	1273
230-1	CHEV	9.75	24.54	33.03	32.66	5.88	2.94	5.88	7.35	33.82	4.41	1.47	33.82	17.5	34.4	2.4	45.7	1404
230-2	CHEV	17.85	16.21	32.97	32.97	7.02	0.00	7.02	7.02	36.84	5.26	0.00	36.84	16.9	35.5	1.5	46.2	1394
208-1	CHEV	15.79	20.03	26.74	36.84	7.02	0.00	7.02	7.02	35.09	1.75	3.51	35.09	8.2	37.6	1.3	52.9	1243
208-2	CHEV	14.90	19.22	27.65	38.23	7.14	0.00	7.14	7.14	35.71	5.36	0.00	35.71	3.9	42.7	0.2	53.2	1293
223-1	DODGE	19.40	19.22	30.16	31.22	4.48	1.49	5.97	5.97	35.82	2.29	1.49	37.31	6.5	43.5	3.7	46.3	1281
223-2	DODGE	17.85	17.49	33.33	31.33	7.58	0.00	6.06	6.06	36.36	6.06	0.00	36.36	6.7	45.5	2.9	44.9	1307
214-1	FORD	21.46	19.31	22.10	37.12	6.90	0.00	6.90	6.90	36.21	6.90	0.00	36.21	15.8	27.8	3.6	52.7	1386
214-2	FORD	21.49	19.74	22.37	36.40	7.27	0.00	7.27	7.27	36.36	5.45	0.00	36.36	14.7	30.2	1.8	53.4	1365
229-1	CHEV	19.31	15.88	29.96	34.84	7.27	0.00	7.27	7.27	36.36	5.45	0.00	36.36	17.1	31.5	1.1	50.3	1406
229-2	CHEV	16.09	16.28	30.84	36.78	7.27	0.00	7.27	7.27	36.36	5.45	0.00	36.36	17.8	31.4	3.1	47.8	1445
222-1	IHC	18.44	14.31	34.50	32.75	6.35	1.59	6.35	6.35	36.51	6.35	1.59	34.92	5.9	45.4	2.4	46.3	1286
222-2	IHC	18.26	14.64	33.39	33.72	6.45	0.00	6.45	6.45	37.10	6.45	0.00	37.10	8.2	43.2	2.1	46.5	1301
231-1	CHEV	17.32	15.71	30.36	36.61	6.35	0.00	6.35	6.35	38.10	4.76	0.00	38.10	18.2	30.1	1.1	50.6	1243
231-2	CHEV	17.43	15.85	30.63	36.09	6.45	0.00	6.45	6.45	37.10	6.45	0.00	37.10	17.9	30.2	1.2	50.6	1239
AVERAGE		18.00	17.99	29.43	34.55	6.63	.47	6.59	6.59	36.62	5.40	.65	36.33	13.9	34.9	2.5	48.3	1302
CONF. LIM.		16.67 TO 19.33	16.78 TO 19.20	27.35 TO 31.50	33.51 TO 35.58	6.12 TO 7.13	-.02 TO .96	6.25 TO 6.93	6.18 TO 6.99	36.06 TO 37.18	4.67 TO 6.13	.12 TO 1.19	35.88 TO 36.77	10.1 TO 17.6	30.9 TO 39.0	1.9 TO 3.0	46.4 TO 50.2	1265 TO 1339
STD. DEV.		2.84	2.59	4.43	2.21	1.08	1.05	.74	.86	1.20	1.56	1.15	.95	8.0	8.6	1.2	4.1	79

Table VII-31

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 DLA ROAD DATA

MODE VARIABLES

RUN NO.	TRUCK MAKE	PCT. TIME IDL.	PCT. TIME CRU.	PCT. TIME ACC.	PCT. TIME DEC.	PCT. CHNG. IDL. TO ACC.	PCT. CHNG. CRU. TO ACC.	PCT. CHNG. CRU. TO DEC.	PCT. CHNG. ACC. TO CRU.	PCT. CHNG. ACC. TO DEC.	PCT. CHNG. DEC. TO IDL.	PCT. CHNG. DEC. TO CRU.	PCT. CHNG. DEC. TO ACC.	PCT. TIME FULL POWER	PCT. TIME PART POWER	PCT. TIME DRIVEN POWER	PCT. TIME CLOSED POWER	AVG PPM
18-8	FORD	17.16	39.08	19.54	24.22	9.24	3.26	15.76	5.43	25.00	9.24	13.59	17.93	31.5	30.3	1.0	37.2	1402
33-1	FORD	16.24	27.87	29.14	26.74	7.92	4.95	7.43	5.45	32.67	8.42	6.93	25.25	28.3	32.0	5.5	34.2	1342
33-2	FORD	20.67	25.93	27.47	25.93	9.65	5.26	10.53	6.14	27.19	8.77	9.21	20.18	29.1	28.6	3.6	38.7	1294
34-1	FORD	12.58	20.89	30.22	36.31	3.91	5.65	7.39	5.65	33.91	2.17	8.26	30.87	21.3	37.8	27.9	13.0	1399
34-8	FORD	17.05	27.14	25.31	30.50	7.00	5.50	11.50	8.00	26.00	5.50	10.50	22.50	22.2	27.4	9.0	41.3	1366
35-2	CHEV	18.29	30.97	24.57	26.17	8.38	7.19	11.98	4.19	28.14	8.98	14.97	16.77	11.9	44.9	5.1	38.0	1387
35-3	CHEV	21.05	22.71	28.47	27.77	9.31	3.43	9.31	4.90	31.37	9.31	7.84	24.02	13.6	39.1	5.7	41.6	1354
37-1	GMC	18.34	29.38	25.90	26.37	8.99	4.49	13.48	3.37	28.09	9.55	14.61	17.42	24.9	39.8	3.7	31.6	1375
37-2	GMC	17.88	31.17	24.29	26.65	7.49	5.88	13.37	6.42	26.20	8.56	12.30	19.25	24.7	37.8	3.0	34.4	1383
42-1	FORD	16.26	34.54	24.46	24.74	8.39	7.10	16.77	8.39	21.29	9.03	14.84	14.19	34.9	24.8	6.1	34.2	1427
42-8	FORD	14.55	36.41	22.75	26.30	7.01	5.73	15.92	3.18	25.48	8.28	18.47	15.29	37.5	21.5	7.1	33.9	1412
44-1	CHEV	14.04	7.83	35.85	42.27	4.87	4.30	1.72	3.15	40.69	2.29	4.01	36.39	17.1	40.6	6.2	36.2	1659
44-2	CHEV	15.80	4.60	36.60	43.00	7.20	2.73	1.24	1.24	41.44	4.71	2.73	35.48	16.8	39.7	6.1	37.4	1700
45-8	CHEV	22.29	27.67	23.95	26.09	9.95	6.28	8.90	5.76	29.84	9.95	9.42	19.37	16.7	37.3	5.1	40.9	1430
45-9	CHEV	22.24	27.55	24.66	25.54	7.69	6.15	11.28	6.15	28.72	8.21	10.77	21.03	15.6	36.9	5.4	42.1	1418
47-1	CHEV	17.36	33.68	23.12	25.85	8.48	3.64	16.36	5.45	24.24	8.48	14.55	18.18	16.8	43.5	3.4	36.3	1456
47-8	CHEV	18.99	31.95	23.28	25.78	8.38	3.14	10.99	4.71	30.37	7.85	10.47	23.04	15.2	44.0	4.7	36.1	1426
50-1	IHC	14.39	35.35	24.71	25.55	7.61	6.09	13.20	7.11	22.84	7.61	10.66	18.27	18.1	39.8	9.9	32.2	1328
50-2	IHC	19.52	31.54	23.54	25.40	8.92	7.04	10.33	6.10	24.88	8.45	8.92	18.78	15.0	39.7	9.5	35.8	1237
AVERAGE		17.62	27.70	26.20	28.48	7.92	5.15	10.92	5.30	28.86	7.65	10.69	21.80	21.6	36.1	6.7	35.5	1410
CONF. LIM.		16.29 TO 18.94	23.44 TO 31.96	24.13 TO 28.28	25.76 TO 31.20	7.18 TO 8.65	4.47 TO 5.83	8.82 TO 13.02	4.46 TO 6.15	26.26 TO 31.46	6.55 TO 8.76	8.78 TO 12.59	18.77 TO 24.83	18.0 TO 25.3	32.8 TO 39.3	4.0 TO 9.4	32.5 TO 38.6	1358 TO 1462
STD. DEV.		2.75	8.84	4.31	5.64	1.52	1.41	4.36	1.75	5.40	2.29	3.95	6.29	7.6	6.7	5.6	6.3	108

Table VII-32

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 CHASSIS DYN. DATA

MODE VARIABLES

RUN NO.	TRUCK MAKE	PCT. TIME IDL.	PCT. TIME CRU.	PCT. TIME ACC.	PCT. TIME DEC.	PCT. CHNG. IDL. TO ACC.	PCT. CHNG. CRU. TO ACC.	PCT. CHNG. CRU. TO DEC.	PCT. CHNG. ACC. TO CRU.	PCT. CHNG. ACC. TO DEC.	PCT. CHNG. DEC. TO IDL.	PCT. CHNG. DEC. TO CRU.	PCT. CHNG. DEC. TO ACC.	PCT. TIME FULL POWER	PCT. TIME PART POWER	PCT. TIME DRIVEN POWER	PCT. TIME CLOSED POWER	AVG PPM
219-1	FORD	17.55	27.96	25.92	28.57	10.20	6.12	8.16	6.12	30.61	6.12	8.16	22.45	31.2	28.3	0.8	39.7	1468
219-2	FORD	17.68	27.24	27.24	27.85	8.70	6.52	8.70	8.70	30.43	6.52	6.52	23.91	30.2	28.0	1.6	40.2	1474
203-1	FORD	20.63	23.76	26.8[illegible]	28.73	5.97	8.96	7.46	7.46	31.34	5.97	7.46	23.88	20.4	35.3	5.1	39.2	1307
203-2	FORD	18.48	26.33	26.7[illegible]	28.41	6.00	10.00	8.00	8.00	30.00	6.00	8.00	22.00	28.6	30.0	2.5	38.9	1351
206-1	FORD	20.62	26.78	23.9[illegible]	28.67	8.00	4.00	8.00	6.00	34.00	6.00	6.00	28.00	25.3	30.7	3.1	40.9	1359
206-2	FORD	19.95	25.8[illegible]	24.70	29.45	7.55	7.55	7.55	7.55	32.08	5.66	7.55	24.53	25.4	28.7	4.3	41.7	1350
207-1	CHEV	16.14	25.43	27.87	30.56	8.16	8.16	8.16	8.16	26.53	2.04	14.29	18.37	20.2	31.7	7.3	40.7	1410
207-2	CHEV	17.56	22.39	29.52	30.53	8.89	8.89	8.8[illegible]	8.89	28.89	6.67	8.89	20.00	21.3	31.2	4.6	30.0	1400
212-1	GMC	17.67	27.29	26.40	28.64	2.56	7.69	10.26	7.69	30.77	5.13	10.26	25.64	20.3	39.5	1.1	39.1	1339
212-2	GMC	18.16	25.78	26.46	29.60	0.00	9.09	9.09	9.09	31.82	2.27	9.09	29.55	19.5	37.4	2.0	41.2	1318
205-1	FORD	17.83	26.96	26.74	28.48	8.70	6.25	8.70	6.52	30.43	6.52	10.87	21.74	35.6	21.0	3.3	40.1	1400
205-2	FORD	18.18	29.60	26.43	25.79	9.76	2.44	9.76	2.44	34.15	7.32	9.76	24.39	35.0	24.9	3.2	36.9	1384
227-1	CHEV	18.90	24.62	27.91	28.57	8.33	8.33	8.33	10.42	29.17	6.25	6.25	22.92	20.2	37.1	2.0	40.8	1603
227-2	CHEV	19.39	22.88	29.41	28.32	7.84	7.84	7.84	9.80	29.41	7.84	5.88	23.53	20.2	35.4	2.4	42.0	1583
224-1	CHEV	17.51	14.00	31.95	36.54	7.14	3.57	10.71	5.36	32.14	5.36	8.93	26.79	12.7	42.1	0.0	45.2	1413
224-2	CHEV	18.10	18.32	31.13	32.45	8.33	4.17	10.42	6.25	31.25	6.25	8.33	25.00	14.8	39.2	0.0	46.3	1400
215-1	CHEV	18.46	32.57	22.61	26.35	9.76	0.00	9.76	0.00	36.59	7.32	9.76	26.83	20.3	40.2	1.2	38.3	1401
215-2	CHEV	18.11	31.89	24.07	25.93	10.26	0.00	10.26	0.00	35.90	7.69	10.26	25.64	19.1	41.5	1.6	37.8	1357
226-1	IHC	18.31	31.19	22.13	28.37	7.84	1.96	7.84	1.96	33.33	7.84	7.84	27.45	18.5	39.2	3.0	39.4	1413
226-2	IHC	19.14	30.45	21.81	28.60	10.42	2.08	8.33	2.08	33.33	8.33	8.33	25.00	16.8	39.0	1.8	42.3	1395
AVERAGE		18.42	26.07	26.50	29.02	7.72	5.68	8.81	6.12	31.61	6.16	8.62	24.38	22.8	34.0	2.5	40.0	1406
CONF. LIM.		17.90 TO 18.93	23.98 TO 28.16	25.20 TO 27.79	27.92 TO 30.12	6.52 TO 8.92	4.20 TO 7.16	8.33 TO 9.29	4.64 TO 7.61	30.47 TO 32.75	5.40 TO 6.91	7.70 TO 9.54	23.11 TO 25.65	19.8 TO 25.8	31.2 TO 36.8	1.7 TO 3.4	38.5 TO 41.6	1370 TO 1442
STD. DEV.		1.10	4.47	2.77	2.34	2.57	3.16	1.03	3.18	2.44	1.62	1.97	2.71	6.4	6.0	1.8	3.3	76

Table VII-33

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 OLA ROAD DATA

MODE VARIABLES

RUN NO.	TRUCK MAKE	PCT. TIME IDL.	PCT. TIME CRU.	PCT. TIME ACC.	PCT. TIME DEC.	PCT. CHNG. IDL. TO ACC.	PCT. CHNG. CRU. TO ACC.	PCT. CHNG. CRU. TO DEC.	PCT. CHNG. ACC. TO CRU.	PCT. CHNG. ACC. TO DEC.	PCT. CHNG. DEC. TO IDL.	PCT. CHNG. DEC. TO CRU.	PCT. CHNG. DEC. TO ACC.	PCT. TIME FULL POWER	PCT. TIME PART POWER	PCT. TIME DRIVEN POWER	PCT. TIME CLOSED POWER	AVG RPM
05-2	CHEV	12.84	44.74	21.37	21.05	5.92	7.89	15.13	9.87	22.37	6.58	11.84	19.08	7.1	57.1	6.5	29.2	1485
05-4	CHEV	13.65	47.64	19.98	18.73	5.70	7.59	12.66	12.03	24.05	6.33	8.23	22.15	6.9	57.7	7.6	27.8	1441
21-8	IHC	13.37	52.17	16.45	18.01	7.26	3.23	15.32	5.65	26.61	8.06	12.90	20.97	10.7	52.4	7.2	29.7	1403
21-9	IHC	11.24	53.47	16.55	18.74	6.15	6.15	16.15	9.23	23.08	6.92	13.08	19.23	14.3	56.6	4.2	24.8	1390
22-8	GMC	10.40	49.11	22.38	18.10	5.22	5.97	13.43	8.96	26.12	5.22	10.45	23.88	24.8	45.1	4.1	26.0	1322
22-9	GMC	20.44	43.99	18.65	16.92	8.00	3.33	12.67	6.00	25.33	7.33	10.67	21.33	17.3	46.6	2.9	33.2	1272
23-8	FORD	12.84	35.69	25.21	26.26	5.41	6.76	12.84	8.11	27.03	6.08	11.49	22.30	20.3	40.6	10.9	28.3	1403
23-9	FORD	15.18	34.11	26.13	24.58	7.64	9.55	10.19	8.28	26.75	7.64	10.83	18.47	19.6	40.6	7.5	32.2	1390
24-1	FORD	17.00	49.90	16.42	16.68	9.76	3.25	15.45	6.50	23.58	9.76	12.20	17.07	19.6	46.3	5.8	28.3	1255
24-2	FORD	14.00	51.18	16.16	18.66	6.86	4.90	14.71	5.88	26.47	7.84	13.73	19.61	18.6	49.2	4.9	27.3	1349
26-8	FORD	11.59	52.48	19.43	16.50	5.38	8.46	15.38	11.54	21.54	5.38	11.54	20.00	42.9	27.8	3.4	25.9	1297
26-9	FORD	13.81	49.02	19.93	17.24	6.61	3.31	17.36	5.79	24.79	7.44	14.88	20.66	38.7	27.2	4.7	29.4	1286
26-1	IHC	13.63	56.29	17.61	12.46	6.12	7.14	15.31	9.18	23.47	8.16	12.24	18.37	24.6	38.7	7.8	28.9	1119
26-8	IHC	14.91	55.27	17.64	12.18	8.42	6.32	16.84	8.42	21.05	8.42	13.68	15.79	23.9	39.7	6.0	30.4	1111
30-8	CHEV	15.83	43.37	20.84	19.96	5.93	8.47	14.41	11.02	22.88	6.78	11.86	18.64	20.1	44.8	4.3	30.8	1474
30-9	CHEV	18.47	36.17	24.41	20.96	7.05	6.41	10.26	9.62	28.21	6.41	7.05	24.36	19.7	41.8	5.8	32.7	1458
36-1	DODGE	17.85	46.44	18.34	17.37	6.93	2.97	15.84	9.90	24.75	7.92	8.91	23.76	20.1	46.7	3.8	29.4	1445
36-3	DODGE	16.22	38.87	21.29	21.61	7.48	5.44	14.29	9.52	24.49	7.48	10.20	21.09	15.5	46.3	7.0	31.2	1344
46-1	IHC	14.40	32.41	18.66	34.53	6.48	10.19	5.56	6.48	30.56	3.70	10.19	23.15	5.1	44.6	4.9	45.4	1056
46-8	IHC	12.16	53.56	15.65	18.63	6.78	5.93	16.10	10.17	22.88	7.63	11.86	19.49	17.3	54.9	0.3	27.4	1255
AVERAGE		14.59	46.29	19.66	19.46	6.76	6.16	14.00	8.61	24.80	7.05	11.39	20.47	19.4	45.2	5.5	29.9	1327
CONF. LIM.		13.34 TO 15.84	42.83 TO 49.76	18.21 TO 21.10	17.18 TO 21.74	6.22 TO 7.29	5.14 TO 7.18	12.70 TO 15.29	7.68 TO 9.54	23.69 TO 25.91	6.43 TO 7.68	10.50 TO 12.29	19.38 TO 21.56	15.0 TO 23.7	41.3 TO 49.2	4.4 TO 6.5	27.9 TO 31.9	1269 TO 1385
STD. DEV.		2.67	7.40	3.08	4.87	1.13	2.18	2.77	1.98	2.37	1.33	1.91	2.33	9.3	8.4	2.3	4.3	123

Table VII-34

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 CHASSIS DYN. DATA

MODE VARIABLES

RUN NO.	TRUCK MAKE	PCT. TIME IDL.	PCT. TIME CRU.	PCT. TIME ACC.	PCT. TIME DEC.	PCT. CHNG. IDL. TO ACC.	PCT. CHNG. CRU. TO ACC.	PCT. CHNG. CRU. TO DEC.	PCT. CHNG. ACC. TO CRU.	PCT. CHNG. ACC. TO DEC.	PCT. CHNG. DEC. TO IDL.	PCT. CHNG. DEC. TO CRU.	PCT. CHNG. DEC. TO ACC.	PCT. TIME FULL POWER	PCT. TIME PART POWER	PCT. TIME DRIVEN POWER	PCT. TIME CLOSED POWER	AVG RPM
201-1	CHEV	14.11	56.20	13.63	16.06	7.69	0.00	15.38	0.00	30.77	7.69	15.38	23.08	4.4	69.9	1.2	24.5	1364
201-2	CHEV	13.99	54.96	13.49	17.56	7.69	0.00	15.38	0.00	30.77	7.69	15.38	23.08	5.1	67.0	2.5	25.4	1374
220-1	IHC	6.08	57.91	14.36	21.65	3.23	6.45	12.90	0.00	32.26	0.00	19.35	22.58	8.0	62.4	5.3	22.6	1445
220-2	IHC	13.03	52.13	15.40	19.43	6.90	0.00	13.79	0.00	34.48	3.45	13.79	27.59	7.3	67.1	2.1	23.4	1433
221-1	GMC	9.17	54.59	18.12	18.12	7.14	0.00	14.29	0.00	32.14	0.00	17.86	25.00	5.4	71.0	1.1	22.1	1439
221-2	GMC	12.85	50.96	17.77	18.42	6.67	0.00	16.67	0.00	30.00	6.67	16.67	23.33	5.1	68.2	0.9	25.9	1438
211-1	FORD	16.75	55.91	11.82	15.52	7.69	0.00	15.38	0.00	30.77	7.69	15.38	23.08	8.1	62.9	1.7	27.3	1325
211-2	FORD	15.38	52.64	14.90	17.07	7.69	0.00	15.38	0.00	30.77	7.69	15.38	23.08	9.6	62.1	1.0	27.3	1376
210-1	FORD	15.04	50.13	17.29	17.54	6.45	3.23	16.13	6.45	25.81	6.45	12.90	22.58	6.5	64.2	1.3	28.0	1390
210-2	FORD	15.41	52.97	12.70	18.92	6.67	3.33	20.00	10.00	20.00	6.67	13.33	20.00	6.2	62.0	1.6	30.2	1379
216-1	FORD	14.68	51.83	17.66	15.83	6.25	0.00	15.63	0.00	31.25	6.25	15.63	25.00	10.8	61.1	1.8	26.3	1351
216-2	FORD	15.12	50.34	17.83	16.70	5.56	0.00	16.67	0.00	30.56	5.56	16.67	25.00	9.9	61.7	1.1	27.3	1348
218-1	IHC	12.34	57.14	14.50	16.02	4.00	4.00	20.00	0.00	24.00	8.00	20.00	16.00	5.6	68.9	0.6	24.8	1213
218-2	IHC	12.34	57.14	14.50	16.02	4.00	4.00	20.00	0.00	24.00	8.00	20.00	16.00	5.6	68.9	0.6	24.8	1213
217-1	CHEV	13.07	54.36	13.76	18.81	5.26	2.63	13.16	2.63	31.58	5.26	13.16	26.32	5.3	75.7	2.3	16.7	1385
217-2	CHEV	14.49	54.83	13.53	17.15	6.06	0.00	15.15	3.03	30.30	6.06	12.12	27.27	3.1	76.9	1.9	18.1	1377
228-1	DODGE	14.25	51.03	15.40	19.31	6.25	0.00	18.75	6.25	25.00	6.25	12.50	25.00	4.8	66.1	1.8	27.3	1523
228-2	DODGE	14.48	50.57	14.94	20.00	5.88	0.00	17.65	5.88	26.47	5.88	11.76	26.47	5.0	66.7	1.8	26.4	1503
209-3	IHC	15.27	52.71	14.04	17.98	7.69	0.00	15.38	0.00	30.77	7.69	15.38	23.08	14.0	58.2	1.0	26.8	1356
209-6	IHC	15.02	54.19	13.40	17.49	10.71	0.00	14.29	3.57	28.57	7.14	14.29	21.43	17.9	55.8	1.2	25.1	1351
AVERAGE		13.64	53.63	14.95	17.78	6.47	1.18	16.10	1.89	29.01	6.00	15.35	23.25	7.4	65.8	1.6	25.0	1379
CONF. LIM.		12.52 TO 14.77	52.48 TO 54.77	14.08 TO 15.82	17.03 TO 18.53	5.70 TO 7.25	.26 TO 2.11	15.08 TO 17.12	.48 TO 3.30	27.33 TO 30.70	4.91 TO 7.10	14.18 TO 16.52	21.78 TO 24.72	5.7 TO 9.1	63.3 TO 68.3	1.2 TO 2.1	23.5 TO 26.5	1343 TO 1415
STD. DEV.		2.40	2.45	1.86	1.59	1.65	1.97	2.18	3.01	3.60	2.34	2.50	3.14	3.6	5.3	1.0	3.2	76

VIII. COMPARISONS OF CHASSIS DYNAMOMETER RESULTS TO ROAD RESULTS

Methods of Analysis

Section VII discussed the significance of the truck-to-truck variability of emission, vehicle-parameter, and mode results. In that discussion it was demonstrated that the standard deviations of the variables under study are quite large, ranging from less than 10% to about 50% of the average values. However, the fact that there is large variability in the truck-to-truck results is not of prime importance to the analysis of the data. The important question is whether or not the chassis dynamometer mode cycles developed in this study provide data for each test vehicle that are in close agreement with the DLA road data. An analysis of the road and chassis dynamometer data (including California-cycle data) based on this approach is shown in Tables VIII-1 through VIII-21. In these tables, the ratio of the chassis dynamometer data to the road data is shown for each vehicle-variable combination. Ideally, if the chassis data were the same as the road data in each case, a value of 1.0 would be obtained. The magnitude of the ratio indicates the direction and degree by which the chassis data deviates from the road data--values less than one meaning the chassis data are low relative to the road, and values greater than one meaning the chassis data are high. In making these comparisons, the two replicate tests on each truck were first averaged before calculating the ratio.

This method of analysis provides a uniform basis for making all necessary comparisons between road and chassis dynamometer data. In this way, the averages, standard deviations, and confidence limits of the various types of data are now expressed in a form that permits meaningful intercomparisons. Where the range of the confidence limits includes 1.0, it can be concluded that the ratio of chassis dynamometer data to the road data is not distinguishable from 1.0 at the

95% confidence level, and that the cycle provides the same results as those obtained on the road.

The following sections compare mode cycle and California cycle results to road results in terms of the ratio method of analysis just described.

Mode Cycle Versus Road Exhaust Emissions

The ratio-comparison data in Tables VIII-1 through VIII-6 for the 16 major exhaust emission variables indicate:

1. In general there is excellent agreement between chassis dynamometer mode-cycle data and DLA road-route data.
2. For most of the 16 variables in each of the three weight groups, a value of 1.0 falls within the range of the confidence limits of the average. This demonstrates that, at the 95% confidence limits, the developed mode cycles provide data that agrees closely with the road-route data.
3. The ratio averages for the 16 exhaust emission variables in:
   a. Group II range from 0.90 to 1.18, and average 1.04.
   b. Group III range from 0.90 to 1.33 and average 1.04. Although the HC and CO data (ratios greater than 1.0) suggest that cycle operation was slightly richer than road operation, the trend is not confirmed by air-fuel ratio results or by NOx concentrations (ratios greater than 1.0).
   c. Group IV range from 0.84 to 1.34 (omitting aromatics) and average 0.97. In this group, the emission averages (HC, CO, and NOx) suggest that cycle operation resulted in slightly leaner operation than the road--a trend again nct confirmed by air-fuel ratio results.

4. The minimum-maximum range of the standard deviations in all three weight groups do not follow any discernible pattern. In one weight group the NOx is maximum, with a value of about 0.38; in another group the maximum is the olefins with a value of 0.45; and in a third weight group the CO standard deviation is maximum with a value of 0.29.
5. CO/CO_2-scaled data are essentially identical to the N_2-scaled data. This implies that there was no large air leak problem in the exhaust-gas sampling system, and that the method of CO/CO_2 scaling of bag samples is reliable and accurate.
6. Based on plus or minus two standard deviations as the confidence limits of individual tests (average of two tests) at the 95% probability level, individual tests are not, in general, distinguishable from a value of 1.0--i.e., chassis and road data are equal.

Vehicle Parameters

Ratios of mode cycle to road data for the four selected vehicle and engine parameters are shown in Tables VIII-13 through VIII-15. These tables show that:

1. In all three weight groups, the comparisons between the mode cycle and the road are excellent.
2. Mode-cycle air-fuel ratios differ from road data by only 1 or 2%.
3. Standard cubic feet air per mile on the mode cycle was within 5% of the road data.
4. Average speed (mph) was within 8% of the road data.
5. Standard deviations of all variables were generally less than 10% of the average.
6. In all cases except for mph in Group II, the range of the confidence limits of the average include a value of 1.0.
7. Based on plus or minus two standard deviations as the confidence limits of individual tests (average of two tests)

at the 95% probability level, individual tests are not, in general, distinguishable from a value of 1.0--i.e., chassis and road data are equal.

Vehicle Modes

Ratio tables VIII-19 through VIII-21 show that:

1. Except for some of the percent-change variables from one major operating condition to another, the agreement between chassis mode-cycle data and road data is reasonably good. The poor agreement in some of the percent-change data is attributed to the necessary brevity of the developed mode cycle, which tended to restrict the number of changes that could be incorporated into the cycle. As a consequence, a total elimination of a mode change in the cycle yields a cycle-to-road ratio of zero, and statistical comparisons then become misleading.
2. In general, the vehicle mode comparisons between cycle and road data are not as consistent and homogeneous as the exhaust emission data. For the mode data, a generally larger variation exists in the averages, standard deviations, and confidence limits than for the emission data. This is in contrast to the basic data (Section VII) where the truck-to-truck variability was smaller for the mode data than for the emission data. From this it is concluded that the road and cycle emission data, although having a relatively high truck-to-truck variability, was such that for each individual truck close agreement was obtained between the road and chassis results. In other words, this indicates that the truck-to-truck emission data varied on the chassis dynamometer cycle in the same manner as on the road.

One area of generally poor agreement between cycle and road data was with respect to the percent time in driven power. This mode

represents a period of time when the carburetor throttle is nearly closed and vehicle inertia supplies the driving force. Poor agreement in the mode may be related to the higher tire friction losses on the chassis rolls as compared to the road, or to the reduced dynamometer inertia loading that was applied following cruise operation. Both of these factors would tend to decrease the time in driven power relative to road operation, thus resulting in the small value, as found, for the ratio of percent time in the mode.

The poor correlation between cycle and road data for percent time in full power (defined for computer processing as any manifold vacuum that results in power-jet operation) in Group IV trucks also has aroused some concern. In hindsight, it now seems that it would have been desirable to include more full-throttle operation in the Group IV cycles, possibly in the 21-24 mph acceleration, or as a substitution for or in addition to one of the part-throttle cruises. Such modifications might also result in better agreement between mode-cycle and road data on hydrocarbons, CO, and standard cubicfeet of exhaust gas per mile. Also, as pointed out in Section III, the maximum inertia loads available at the chassis dynamometer were inadequate for the heaviest group IV trucks, and this factor probably accounts in part for the overall shortage of full-throttle mode time for the group as a whole.

California Cycle Versus Road Exhaust Emissions

Tables VIII-7 through VIII-12 show the ratios of the California truck-cycle emission data relative to the DLA road-route data for the same vehicles of each weight group. These data indicate that:

1. The standard deviations of the ratios for the various exhaust emission variables are about the same as the standard deviations of the ratios of the mode-cycle data relative to the road data.

2. Except for NOx, the average California cycle emissions are:
   a. For Group II, about 50% or less of the road emissions on both a concentration and mass basis.
   b. For Group III, about 50% of the road emissions on a concentration basis, and about 40% on a mass basis.
   c. For Group IV, about 60% of the road emissions on a concentration basis, and about 50% on a mass basis.
3. NOx values generally are about 50% greater for the California cycle than on the road.
4. Since the range of the confidence limits in almost no cases comes close to including a ratio of 1.0, it is unlikely that California cycle emissions would equal road emissions.

Vehicle Parameters

Tables VIII-16 through VIII-18 show the ratio of the vehicle-parameter data for the California cycle relative to DLA road-route operation for the same vehicles in each of the three weight groups. These data show that:

1. For all weight groups, the standard deviations expressed as a percentage of the average are small, with values of about 10% or less.
2. For Group II trucks, air-fuel ratio and standard cubic feet of exhaust gas per mile correlate well with road data; however, average vehicle speed was about 75% higher on the California cycle than on the road.
3. For weight Groups III and IV, air-fuel ratios also correlated well with road data, but exhaust flow was only about 75% of that on the road, and average speed was about 50% greater.

Comparison of California-Cycle Chart Emissions With Bag Data From the Road, Mode Cycle, and California Cycle

As mentioned, at least half of the trucks (five or six) in Groups II, III and IV were operated on the California truck cycle using the

procedures and equipment outlined in "California Test Procedure and Criteria for Motor Vehicle Exhaust Emission Control," revision of 11/16/66. In addition to the usual sampling and analytical equipment specified in the procedure for recording mode emissions, a Pace proportional sampler was also used to obtain composite bag samples over the cycle. Complete summaries of the Pace data are given in the tables of results in Section VII. Chart recordings of mode HC, CO, and CO_2 emissions (by NDIR analysis) were read according to the instructions outlined in the California procedure. Chart values were then transferred to computer punch cards, and the necessary calculations were handled by a computer program written to provide outputs of individual-cycle emission concentrations, average cold and hot-cycle concentrations, and four-cycle composite emissions. The weighting and correction factors specified in the Procedure were used in making these calculations. Detailed computer print-outs of the chart results are given in Section IX.

Table VIII-22 compares the California-cycle composite chart data with sampler bag data obtained from the California cycle and from the road mode-cycle tests for the same trucks (all data on a concentration basis). Major conclusions derived from data in the table are as follows:

1. Although California cycle chart and sampler bag values for CO were, on the whole, in good agreement, bag HC values were 16% to 48% higher than those obtained from the charts.
2. HC concentrations from the California chart were roughly one-third of the road concentrations.
3. For CO concentrations, chart values were about two-thirds of road concentrations for Group II and III trucks, but about the same as road values for Group IV trucks.

A preliminary inspection of air consumption data between the road and California cycle (see parameter tables in Section VII and

this section) indicates that the lighter trucks (Group II) showed the best agreement, and the Group III and IV trucks the poorest, with cycle air consumption values generally lagging road values more and more as truck weights became heavier. Such divergence may be a function of the constant and comparatively light "acceleration" and "cruise" engine loadings used in the California cycle relative to the road--i.e., in terms of true engine loading that occurs in road operation, the California cycle is more realistic for the lighter trucks than for the heavier ones.

One truck tested on the California cycle (Group IV Ford-1) was equipped with a manifold-flooding device to prevent engine backfire during closed-throttle decelerations. The device operates by enrichening the air-fuel ratio beyond the combustible rich limit when manifold vacuum exceeds about 22 in. Hg. When operated on the California cycle, trucks equipped with the device characteristically show off-scale HC traces combined with CO and CO_2 values approaching zero during the Sequence-9 deceleration, indicating that little or no combustion is taking place in that mode. For the Ford truck in question, the Sequence-9 HC concentrations were assigned estimated values equal to the maximum calibrated range of the analyzer, or about 66,000 ppmC. This estimate, which was on the low side by an unknown amount, resulted in the "greater than" notation for cycle HC values shown in Table VIII-22 for Group IV Ford-1.

Table VIII-1

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 .... RATIOS CHASSIS/ROAD

NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
104-204	GMC	1.05	1.08	1.66	.75	1.02	1.16	.90	1.09	1.03	1.06	1.63	.70	1.00	1.14	.88	1.07
108-208	CHEV	1.18	1.11	1.37	1.14	1.07	.71	1.24	.92	1.16	1.09	1.34	1.18	1.05	.70	1.21	.90
113-213	FORD	1.43	1.32	1.14	1.37	1.39	.99	.82	.99	1.32	1.22	1.05	1.27	1.29	.91	.76	.91
114-214	FORD	1.25	1.23	1.09	1.36	1.27	1.04	.99	1.04	1.24	1.22	1.07	1.35	1.25	1.03	.97	1.02
122-222	IHC	.95	.96	.95	1.00	.94	1.54	.69	1.02	1.01	1.02	1.01	1.06	.99	1.64	.73	1.08
123-223	DODGE	.84	.87	2.11	.78	.78	1.77	.56	1.05	.82	.85	2.08	.76	.76	1.73	.55	1.03
125-225	FORD	.96	.93	.70	1.11	.88	1.08	.90	.99	.99	.96	.74	1.18	.91	1.12	.94	1.03
129-229	CHEV	.95	.96	.93	.74	1.02	.74	1.22	.95	.83	.84	.82	.58	.89	.65	1.07	.83
130-230	CHEV	.80	.79	.69	.61	.84	1.39	.81	1.00	.82	.81	.69	.52	.86	1.41	.82	1.01
131-231	CHEV	1.23	1.19	.65	.97	1.28	1.33	1.02	1.07	1.31	1.27	.68	.79	1.36	1.42	1.09	1.13
AVERAGE		1.06	1.05	1.13	.98	1.05	1.18	.91	1.01	1.05	1.03	1.11	.94	1.04	1.17	.90	1.00
CONF. LIM.		.92 TO 1.21	.92 TO 1.17	.79 TO 1.46	.79 TO 1.17	.90 TO 1.19	.93 TO 1.42	.76 TO 1.07	.97 TO 1.05	.91 TO 1.19	.91 TO 1.15	.79 TO 1.44	.72 TO 1.16	.89 TO 1.18	.91 TO 1.44	.76 TO 1.04	.94 TO 1.07
STD. DEV.		.20	.17	.47	.26	.20	.34	.21	.05	.20	.17	.45	.30	.20	.37	.20	.09

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Table VIII-2

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 .... RATIOS CHASSIS/ROAD

CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
104-204	GMC	.89	1.02	1.58	.71	.97	1.10	.85	1.04	.97	1.00	1.55	.67	.95	1.08	.83	1.02
109-209	CHEV	1.20	1.19	1.39	1.16	1.08	.72	1.25	.93	1.18	1.11	1.37	1.21	1.06	.71	1.23	.91
113-213	FORD	1.44	1.33	1.15	1.38	1.40	.99	.82	1.00	1.33	1.23	1.06	1.27	1.30	.92	.76	.92
114-214	FORD	1.25	1.23	1.08	1.35	1.26	1.04	.98	1.03	1.23	1.21	1.07	1.34	1.24	1.02	.97	1.02
122-222	IHC	.96	.96	.95	1.00	.94	1.55	.69	1.02	1.01	1.02	1.01	1.07	.99	1.65	.73	1.08
123-223	DODGE	.86	.82	2.17	.80	.80	1.82	.58	1.08	.85	.88	2.12	.79	.79	1.79	.57	1.06
125-225	FORD	.96	.93	.70	1.11	.88	1.08	.90	.99	.99	.96	.74	1.18	.91	1.12	.94	1.03
129-229	CHEV	.95	.96	.93	.74	1.02	.74	1.22	.95	.83	.84	.82	.58	.89	.65	1.07	.83
130-230	CHEV	.83	.82	.71	.62	.86	1.43	.83	1.02	.84	.83	.73	.53	.88	1.46	.84	1.04
131-231	CHEV	1.17	1.13	.62	.92	1.21	1.26	.96	1.01	1.24	1.20	.67	.76	1.29	1.34	1.03	1.08
AVERAGE		1.06	1.04	1.13	.98	1.04	1.17	.91	1.01	1.05	1.03	1.11	.94	1.03	1.17	.90	1.00
CONF. LIM.		.92 TO 1.20	.93 TO 1.16	.79 TO 1.47	.79 TO 1.17	.90 TO 1.18	.92 TO 1.42	.76 TO 1.06	.98 TO 1.04	.91 TO 1.18	.92 TO 1.14	.79 TO 1.44	.72 TO 1.16	.90 TO 1.16	.90 TO 1.44	.76 TO 1.03	.94 TO 1.06
STD. DEV.		.19	.16	.48	.27	.19	.35	.21	.04	.19	.15	.45	.31	.19	.38	.19	.08

Table VIII - 3

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 .... RATIOS CHASSIS/ROAD

NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
103-203	FORD	1.11	1.08	1.05	1.00	1.15	.96	.96	.97	1.10	1.08	1.04	.98	1.14	.96	.95	.96
105-205	FORD	1.08	1.04	1.76	.75	.91	1.14	1.08	.93	1.27	1.22	2.06	.86	1.08	1.35	1.27	1.10
106-206	FORD	1.05	1.01	.89	1.25	1.00	1.32	.72	.98	1.11	1.06	.93	1.41	1.05	1.40	.76	1.04
107-207	CHEV	.97	.96	1.06	.77	.99	1.13	1.19	.96	1.07	1.06	1.16	.80	1.09	1.23	1.31	1.05
112-212	GMC	.94	.86	.79	.80	.96	1.66	.52	1.03	1.00	.91	.84	.84	1.02	1.77	.56	1.10
115-215	CHEV	1.28	1.13	.90	1.16	1.25	1.14	.90	1.04	1.28	1.13	.91	1.16	1.26	1.14	.90	1.04
119-219	FORD	.84	.89	.89	1.05	.78	1.13	.98	1.02	.85	.90	.90	1.09	.78	1.14	.99	1.02
124-224	CHEV	1.08	1.05	.95	1.23	.99	1.02	.93	1.03	1.04	1.00	.91	1.21	.95	.98	.89	.98
126-226	IHC	.81	.80	.89	.95	.73	1.37	.81	1.00	.94	.93	1.03	1.15	.85	1.60	.94	1.16
127-227	CHEV	.85	.83	.85	.96	.78	1.39	.87	1.00	.92	.90	.93	1.09	.85	1.52	.95	1.09
AVERAGE		1.00	.96	1.00	.90	.95	1.23	.90	.99	1.06	1.02	1.07	1.06	1.01	1.31	.95	1.05
CONF. LIM.		.90 TO 1.11	.88 TO 1.05	.80 TO 1.20	.86 TO 1.13	.84 TO 1.07	1.08 TO 1.38	.76 TO 1.03	.97 TO 1.02	.96 TO 1.16	.94 TO 1.10	.81 TO 1.33	.92 TO 1.20	.90 TO 1.11	1.12 TO 1.50	.80 TO 1.11	1.01 TO 1.10
STD. DEV.		.15	.11	.28	.18	.17	.21	.19	.04	.14	.11	.36	.19	.15	.27	.22	.06

Table VIII - 4

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 .... RATIOS CHASSIS/ROAD

CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
103-203	FORD	1.15	1.12	1.09	1.04	1.19	1.00	1.00	1.00	1.14	1.11	1.08	1.02	1.19	.99	.98	.99
105-205	FORD	1.11	1.07	1.81	.77	.94	1.17	1.11	.96	1.30	1.25	2.11	.88	1.10	1.38	1.30	1.12
106-206	FORD	1.09	1.05	.92	1.30	1.04	1.38	.75	1.02	1.15	1.11	.97	1.48	1.10	1.45	.79	1.08
107-207	CHEV	.98	.97	1.06	.77	1.00	1.13	1.20	.96	1.07	1.06	1.17	.80	1.10	1.24	1.31	1.06
112-212	GMC	.95	.87	.80	.81	.97	1.69	.53	1.05	1.02	.93	.86	.86	1.04	1.80	.57	1.12
115-215	CHEV	1.28	1.13	.90	1.16	1.25	1.14	.90	1.04	1.28	1.13	.91	1.16	1.26	1.16	.90	1.04
119-219	FORD	.83	.88	.88	1.04	.77	1.12	.97	1.00	.84	.88	.89	1.07	.77	1.13	.98	1.01
124-224	CHEV	1.09	1.05	.95	1.24	1.00	1.03	.93	1.04	1.04	1.01	.91	1.22	.95	.98	.89	.99
126-226	IHC	.83	.82	.91	.98	.75	1.41	.83	1.02	.96	.95	1.07	1.18	.87	1.64	.96	1.19
127-227	CHEV	.85	.83	.86	.97	.78	1.39	.87	1.00	.93	.91	.93	1.09	.85	1.52	.95	1.09
AVERAGE		1.02	.98	1.02	1.01	.97	1.25	.91	1.01	1.07	1.03	1.09	1.08	1.02	1.33	.96	1.07
CONF. LIM.		.91 TO 1.12	.89 TO 1.06	.81 TO 1.23	.87 TO 1.14	.85 TO 1.09	1.09 TO 1.40	.78 TO 1.04	.99 TO 1.03	.97 TO 1.18	.95 TO 1.12	.82 TO 1.35	.93 TO 1.22	.91 TO 1.13	1.13 TO 1.53	.81 TO 1.12	1.02 TO 1.12
STD. DEV.		.15	.12	.29	.19	.17	.22	.18	.03	.15	.12	.37	.20	.16	.28	.22	.06

Table VIII-5

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 .... RATIOS CHASSIS/ROAD

NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IP PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM* LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
101-201	CHEV	.93	.94	.96	1.06	.87	1.22	.99	1.03	.88	1.00	1.02	1.15	.93	1.30	1.05	1.09
109-209	IHC	.91	.91	.99	1.20	.86	1.14	.94	.99	1.12	1.13	1.22	1.76	1.07	1.41	1.16	1.22
110-210	FORD	.91	.89	.99	.67	.89	1.79	.38	1.03	.93	.90	1.01	.46	.90	1.82	.38	1.05
111-211	FORD	.98	.97	1.11	10.64	.49	1.39	.89	.99	.88	.87	1.11	-22.40	.49	1.39	.89	.99
116-216	FORD	1.04	1.03	.90	1.08	1.04	1.13	.96	1.01	.95	.95	.83	1.00	.96	1.04	.79	.92
117-217	CHEV	1.08	1.08	1.06	1.15	1.03	.98	.94	.97	1.02	1.02	1.00	1.09	.98	.93	.89	.92
118-218	IHC	1.11	1.09	1.01	1.17	1.08	.94	.90	.97	.99	.97	.90	1.04	.95	.83	.80	.86
120-220	IHC	.66	.69	.71	.79	.64	1.60	.69	1.07	.85	.84	.90	1.04	.83	2.05	.88	1.37
121-221	GMC	.83	.82	.79	.89	.78	1.26	.67	.98	.88	.86	.84	.94	.82	1.33	.71	1.03
128-228	DODGE	.75	.77	.55	.92	.80	1.26	.77	1.10	.78	.80	.58	.86	.83	1.31	.80	1.14
AVERAGE		.90	.91	.91	1.95	.85	1.27	.80	1.01	.93	.94	.94	-1.31	.87	1.34	.84	1.06
CONF. LIM.		.80 TO 1.00	.82 TO 1.00	.78 TO 1.03	-.24 TO 4.13	.72 TO .98	1.08 TO 1.46	.67 TO .93	.98 TO 1.04	.86 TO 1.00	.87 TO 1.01	.81 TO 1.07	-6.61 TO 4.00	.76 TO .99	1.07 TO 1.61	.69 TO .98	.95 TO 1.17
STD. DEV.		.14	.13	.17	3.06	.18	.26	.18	.04	.10	.09	.18	7.42	.16	.38	.21	.15

* Negative ratios results from negative values in calculating pounds of effluent per mile.

Table VIII-6

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 .... RATIOS CHASSIS/ROAD

CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM* LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
101-201	CHEV	.81	.92	.94	1.03	.85	1.19	.96	1.00	.86	.98	1.00	1.11	.91	1.27	1.02	1.06
109-209	IHC	.92	.93	1.00	1.21	.88	1.16	.95	1.01	1.14	1.15	1.23	1.77	1.08	1.43	1.18	1.24
110-210	FORD	.95	.93	1.03	.70	.93	1.87	.40	1.08	.97	.94	1.04	.46	.94	1.90	.40	1.09
111-211	FORD	.89	.88	1.13	10.81	.49	1.42	.90	1.00	.89	.88	1.13	-22.75	.49	1.41	.90	1.00
116-216	FORD	1.04	1.04	.91	1.09	1.05	1.14	.87	1.01	.96	.96	.84	1.01	.97	1.05	.80	.93
117-217	CHEV	1.11	1.11	1.09	1.18	1.06	1.01	.97	1.00	1.05	1.04	1.02	1.12	1.00	.96	.91	.94
118-218	IHC	1.15	1.13	1.04	1.21	1.11	.97	.93	1.00	1.02	1.00	.93	1.08	.99	.86	.83	.89
120-220	IHC	.66	.68	.70	.78	.64	1.58	.68	1.05	.84	.88	.90	1.02	.82	2.03	.87	1.35
121-221	GMC	.86	.84	.82	.91	.80	1.30	.70	1.01	.90	.89	.86	.98	.85	1.37	.74	1.07
128-228	DODGE	.73	.75	.54	.80	.78	1.23	.75	1.07	.76	.79	.56	.84	.81	1.28	.78	1.12
AVERAGE		.91	.92	.92	1.97	.86	1.29	.81	1.02	.94	.95	.95	-1.34	.89	1.36	.84	1.07
CONF. LIM.		.80 TO 1.03	.82 TO 1.02	.79 TO 1.05	-.25 TO 4.20	.72 TO 1.00	1.09 TO 1.48	.68 TO .94	1.00 TO 1.05	.86 TO 1.02	.88 TO 1.02	.82 TO 1.08	-6.72 TO 4.05	.77 TO 1.00	1.09 TO 1.62	.70 TO .99	.97 TO 1.17
STD. DEV.		.16	.14	.19	3.11	.19	.27	.18	.03	.11	.10	.18	7.53	.16	.38	.20	.14

* Negative ratios results from negative values in calculating pounds of effluent per mile.

Table VIII-7

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 .... RATIOS CALIF./ROAD

NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
104-304	GMC	.24	.29	.46	.27	.24	1.69	.71	1.14	.19	.23	.36	.22	.19	1.34	.56	.90
108-308	CHEV	.28	.31	.57	.19	.27	1.60	.68	1.05	.28	.31	.57	.11	.27	1.61	.69	1.06
113-313	FORD	.38	.40	.51	.39	.35	1.76	.38	1.07	.38	.40	.51	.39	.35	1.76	.38	1.07
122-322	IHC	.40	.44	.62	.46	.40	1.61	.63	1.04	.39	.43	.59	.45	.39	1.57	.61	1.01
125-325	FORD	.39	.42	.81	.44	.37	2.57	.63	1.07	.39	.42	.79	.44	.37	2.55	.62	1.06
131-331	CHEV	.42	.45	.51	.92	.39	.95	.59	1.22	.47	.51	.57	1.38	.44	1.08	.66	1.36
AVERAGE		.35	.39	.58	.44	.34	1.70	.60	1.10	.35	.38	.57	.50	.34	1.65	.59	1.08
CONF. LIM.		.27 TO .43	.31 TO .46	.45 TO .71	.18 TO .71	.27 TO .41	1.16 TO 2.24	.48 TO .73	1.03 TO 1.17	.25 TO .45	.28 TO .49	.42 TO .71	.02 TO .98	.24 TO .43	1.13 TO 2.17	.47 TO .70	.92 TO 1.24
STD. DEV.		.07	.07	.12	.25	.07	.52	.12	.07	.10	.10	.14	.45	.09	.50	.11	.15

Table VIII-8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 .... RATIOS CALIF./ROAD

CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
104-304	GMC	.23	.28	.43	.25	.23	1.60	.67	1.08	.18	.22	.34	.21	.18	1.27	.53	.85
108-308	CHEV	.28	.31	.57	.19	.27	1.60	.68	1.05	.28	.31	.57	.11	.27	1.61	.69	1.06
113-313	FORD	.38	.40	.51	.39	.35	1.76	.38	1.07	.38	.40	.51	.39	.35	1.76	.38	1.07
122-322	IHC	.40	.44	.62	.46	.40	1.61	.63	1.04	.39	.43	.59	.45	.39	1.57	.61	1.01
125-325	FORD	.39	.42	.81	.44	.37	2.57	.63	1.07	.39	.42	.79	.44	.37	2.55	.62	1.06
131-331	CHEV	.39	.42	.47	.86	.36	.89	.55	1.13	.44	.47	.53	1.33	.41	1.00	.61	1.26
AVERAGE		.35	.38	.57	.43	.33	1.67	.59	1.07	.34	.38	.56	.49	.33	1.63	.58	1.05
CONF. LIM.		.27 TO .42	.31 TO .45	.43 TO .71	.19 TO .68	.26 TO .40	1.11 TO 2.24	.47 TO .71	1.04 TO 1.11	.24 TO .44	.28 TO .47	.40 TO .71	.03 TO .95	.24 TO .42	1.07 TO 2.18	.46 TO .69	.92 TO 1.19
STD. DEV.		.07	.07	.13	.23	.07	.54	.11	.03	.10	.09	.15	.44	.08	.53	.11	.13

Table VIII-9

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 .... PATIOS CALIF./ROAD

NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
103-303	FORD	.32	.36	.44	.25	.40	.94	.51	1.06	.23	.26	.32	.17	.29	.68	.37	.77
105-305	FORD	.59	.61	.97	.47	.57	1.65	.69	1.09	.45	.47	.67	.35	.44	1.27	.53	.84
112-312	GMC	.43	.50	.61	.41	.48	1.55	.60	1.07	.32	.37	.46	.30	.35	1.16	.45	.80
124-324	CHEV	.52	.57	.64	.60	.54	1.99	.52	1.12	.37	.41	.47	.44	.39	1.42	.37	.80
126-326	IHC	.34	.42	.48	.58	.35	1.28	.81	1.07	.28	.34	.39	.51	.29	1.05	.66	.87
127-327	CHEV	.40	.44	.45	.55	.40	1.74	.59	1.09	.34	.37	.38	.49	.34	1.48	.50	.93
AVERAGE		.43	.48	.58	.47	.46	1.53	.62	1.08	.33	.37	.45	.38	.35	1.18	.48	.83
COEF. LIM.		.32 TO .54	.38 TO .58	.41 TO .76	.33 TO .62	.37 TO .55	1.14 TO 1.91	.50 TO .74	1.06 TO 1.10	.25 TO .41	.30 TO .44	.32 TO .57	.24 TO .51	.29 TO .41	.87 TO 1.48	.37 TO .60	.77 TO .89
STD. DEV.		.10	.09	.16	.13	.09	.37	.12	.02	.08	.07	.12	.13	.06	.29	.11	.06

Table VIII-10

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 .... RATIOS CALIF./ROAD

CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
103-303	FORD	.30	.35	.42	.23	.38	.90	.49	1.01	.22	.25	.31	.16	.28	.65	.36	.74
105-305	FORD	.59	.61	.87	.47	.57	1.65	.69	1.09	.45	.47	.67	.35	.44	1.27	.53	.84
112-312	GMC	.43	.50	.61	.41	.48	1.55	.60	1.07	.32	.37	.46	.30	.35	1.16	.45	.80
124-324	CHEV	.52	.57	.64	.60	.54	2.00	.52	1.12	.37	.41	.47	.44	.39	1.43	.37	.80
126-326	IHC	.33	.40	.46	.56	.34	1.24	.79	1.03	.27	.33	.38	.49	.28	1.01	.64	.84
127-327	CHEV	.40	.44	.46	.55	.40	1.75	.59	1.10	.34	.37	.39	.49	.34	1.49	.50	.93
AVERAGE		.43	.48	.58	.47	.45	1.51	.61	1.07	.33	.37	.44	.37	.35	1.17	.48	.83
CONF. LIM.		.31 TO .54	.37 TO .58	.40 TO .76	.33 TO .61	.36 TO .55	1.10 TO 1.93	.50 TO .73	1.03 TO 1.11	.24 TO .41	.29 TO .44	.31 TO .58	.24 TO .51	.28 TO .41	.85 TO 1.49	.36 TO .59	.76 TO .89
STD. DEV.		.11	.10	.17	.14	.09	.39	.11	.04	.08	.07	.12	.13	.06	.31	.11	.07

Table VIII-11

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 .... RATIOS CALIF./ROAD

NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM* LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
101-301	CHEV	.47	.53	.00	.00	.00	1.12	.85	1.01	.39	.44	.00	1.94	.00	.94	.71	.85
111-311	FORD	.71	.71	1.17	7.21	.40	1.18	1.17	1.00	.52	.51	.85	-10.90	.29	.86	.85	.72
118-318	IHC	.81	.87	.89	.84	.89	1.23	.90	1.03	.55	.59	.61	.57	.60	.84	.62	.70
120-320	IHC	.56	.60	.62	.63	.57	1.52	.72	1.08	.54	.57	.60	.61	.55	1.46	.70	1.04
121-321	GMC	.52	.59	.58	.59	.58	1.05	.86	1.02	.37	.42	.42	.42	.42	.75	.62	.73
128-328	DODGE	.54	.59	.53	.69	.58	1.21	.80	1.11	.40	.44	.40	.55	.43	.91	.60	.83
AVERAGE		.60	.65	.63	1.66	.50	1.22	.88	1.04	.46	.50	.48	-1.14	.38	.96	.68	.81
CONF. LIM.		.46 TO .74	.52 TO .78	.22 TO 1.04	-1.21 TO 4.53	.20 TO .81	1.05 TO 1.39	.72 TO 1.05	1.00 TO 1.09	.38 TO .55	.42 TO .57	.18 TO .78	-6.19 TO 3.92	.15 TO .61	.69 TO 1.22	.58 TO .78	.68 TO .95
STD. DEV.		.13	.12	.39	2.74	.29	.16	.15	.04	.08	.07	.29	4.82	.22	.25	.10	.13

* Negative ratios results from negative values in calculating pounds of effluent per mile.

Table VIII-12

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 .... RATIOS CALIF./ROAD

CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM* LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
101-301	CHEV	.46	.53	.00	.00	.00	1.11	.85	1.00	.39	.44	.00	1.91	.00	.93	.71	.84
111-311	FORD	.71	.71	1.17	7.21	.40	1.18	1.17	1.00	.52	.51	.85	-10.90	.29	.86	.85	.72
118-318	IHC	.81	.87	.89	.84	.89	1.23	.90	1.03	.55	.59	.61	.57	.60	.84	.62	.70
120-320	IHC	.54	.58	.60	.61	.56	1.47	.70	1.05	.52	.56	.58	.60	.53	1.42	.68	1.01
121-321	GMC	.51	.58	.57	.58	.58	1.03	.84	1.01	.36	.41	.41	.42	.41	.74	.61	.72
128-328	DODGE	.52	.57	.51	.67	.56	1.17	.77	1.07	.39	.43	.38	.53	.42	.87	.58	.80
AVERAGE		.59	.64	.62	1.65	.50	1.20	.87	1.03	.46	.49	.47	-1.15	.38	.94	.67	.80
CONF. LIM.		.45 TO .74	.50 TO .77	.21 TO 1.04	-1.22 TO 4.53	.10 TO .80	1.04 TO 1.36	.70 TO 1.05	1.00 TO 1.06	.37 TO .54	.41 TO .57	.17 TO .77	-6.20 TO 3.90	.15 TO .60	.69 TO 1.20	.57 TO .78	.68 TO .92
STD. DEV.		.14	.13	.39	2.74	.29	.15	.16	.03	.08	.07	.29	4.81	.21	.24	.10	.12

* Negative ratios results from negative values in calculating pounds of effluent per mile.

Table VIII-13

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 .... RATIOS CHASSIS/ROAD

RUN NO.	TRUCK MAKE	A/F CO/CO2	...SCF/MILE... AIR	EXH	MPH
104-204	GMC	1.01	.98	.98	1.06
108-208	CHEV	.97	.97	.98	.97
113-213	FORD	1.02	.93	.92	1.11
114-214	FORD	1.00	.99	.99	1.07
122-222	IHC	1.03	1.07	1.06	1.10
123-223	DODGE	1.06	1.00	.98	1.07
125-225	FORD	1.01	1.04	1.04	1.09
129-229	CHEV	.97	.86	.87	1.11
130-230	CHEV	1.01	1.02	1.02	1.09
131-231	CHEV	1.01	1.07	1.06	1.13
AVERAGE		1.01	.99	.99	1.08
CONF. LIM.		.99 TO 1.03	.95 TO 1.04	.95 TO 1.03	1.05 TO 1.11
STD. DEV.		.03	.06	.06	.04

Table VIII - 14

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 .... RATIOS CHASSIS/ROAD

RUN NO.	TRUCK MAKE	A/F CO/CO2	...SCF/MILE... AIR	EXH	MPH
103-203	FORD	1.00	.99	.99	.99
105-205	FORD	.99	1.17	1.18	1.05
106-206	FORD	1.02	1.06	1.05	1.01
107-207	CHEV	.98	1.09	1.10	1.03
112-212	GMC	1.05	1.08	1.07	1.02
115-215	CHEV	1.02	1.01	1.00	1.04
119-219	FORD	1.00	1.01	1.01	1.04
124-224	CHEV	1.01	.96	.96	.92
126-226	IHC	1.01	1.17	1.16	1.04
127-227	CHEV	1.02	1.09	1.09	.95
AVERAGE		1.01	1.06	1.06	1.01
CONF. LIM.		1.00 TO 1.02	1.01 TO 1.12	1.01 TO 1.11	.98 TO 1.04
STD. DEV.		.02	.07	.07	.04

Table VIII-15

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 .... RATIOS CHASSIS/ROAD

RUN NO.	TRUCK MAKE	A/F CO/CO2	...SCF/MILE... AIR	EXH	MPH
101-201	CHEV	1.00	1.06	1.06	.94
109-209	IHC	1.00	1.23	1.23	.95
110-210	FORD	1.07	1.03	1.01	.95
111-211	FORD	1.01	1.00	1.00	.99
116-216	FORD	1.01	.92	.92	1.00
117-217	CHEV	1.00	.95	.95	.97
118-218	IHC	1.01	.89	.89	1.00
120-220	IHC	1.03	1.30	1.28	.97
121-221	GMC	1.03	1.06	1.06	1.04
128-228	DODGE	1.04	1.05	1.04	.87
AVERAGE		1.02	1.05	1.04	.97
CONF. LIM.		1.00 TO 1.04	.96 TO 1.14	.95 TO 1.14	.93 TO 1.00
STD. DEV.		.02	.13	.13	.05

Table VIII-16

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 ....RATIOS CALIF./ROAD/

RUN NO.	TRUCK MAKE	A/F CO/CO2	...SCF/MILE... AIR	EXH	MPH
104-304	GMC	1.03	.80	.79	1.85
108-308	CHEV	1.03	1.01	1.00	1.59
113-313	FORD	1.08	1.02	1.00	1.67
122-322	IHC	1.04	.98	.97	1.81
125-325	FORD	1.05	1.01	.99	1.63
131-331	CHEV	1.07	1.14	1.12	1.97
AVERAGE		1.05	.99	.98	1.75
CONF. LIM.		1.03 TO 1.07	.88 TO 1.11	.87 TO 1.09	1.60 TO 1.91
STD. DEV.		.02	.11	.11	.15

Table VIII-17

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 ....RATIOS CALIF./ROAD/

RUN NO.	TRUCK MAKE	A/F CO/CO2	...SCF/MILE... AIR	EXH	MPH
103-303	FORD	1.06	.74	.73	1.59
105-305	FORD	1.03	.78	.77	1.61
112-312	GMC	1.05	.76	.75	1.61
124-324	CHEV	1.07	.73	.72	1.44
126-326	IHC	1.02	.82	.82	1.70
127-327	CHEV	1.06	.86	.85	1.35
AVERAGE		1.05	.78	.77	1.55
CONF. LIM.		1.03 TO 1.07	.73 TO .84	.72 TO .83	1.41 TO 1.69
STD. DEV.		.02	.05	.05	.13

Table VIII-18

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 ....RATIOS CALIF./ROAD/

RUN NO.	TRUCK MAKE	A/F CO/CO2	...SCF/MILE... AIR	EXH	MPH
101-301	CHEV	1.01	.84	.84	1.31
111-311	FORD	.99	.72	.72	1.44
118-318	IHC	1.01	.68	.68	1.88
120-320	IHC	1.03	.97	.96	1.48
121-321	GMC	1.01	.72	.72	1.66
128-328	DODGE	1.04	.76	.75	1.34
AVERAGE		1.02	.78	.78	1.52
CONF. LIM.		1.00 TO 1.03	.67 TO .89	.67 TO .89	1.29 TO 1.74
STD. DEV.		.02	.11	.10	.21

Table VIII-19

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2

MODE VARIABLES RATIOS CHASSIS/ROAD

RUN NO.	TRUCK MAKE	PCT. TIME IDL.	PCT. TIME CRU.	PCT. TIME ACC.	PCT. TIME DEC.	PCT. CHNG. IDL. TO ACC.	PCT. CHNG. CRU. TO ACC.	PCT. CHNG. CRU. TO DEC.	PCT. CHNG. ACC. TO CRU.	PCT. CHNG. ACC. TO DEC.	PCT. CHNG. DEC. TO IDL.	PCT. CHNG. DEC. TO CRU.	PCT. CHNG. DEC. TO ACC.	PCT. TIME FULL POWER	PCT. TIME PART POWER	PCT. TIME DRIVEN POWER	PCT. TIME CLOSED POWER	AVG RPM
02 213	FORD	1.29	.91	.73	1.17	.89	.31	.64	.79	1.20	.84	.25	1.37	1.02	.73	.29	1.58	1.00
06 204	GMC	.89	.92	1.00	1.12	.85	.00	.95	1.07	1.08	.72	.17	1.26	.56	1.09	.32	1.16	1.03
13 225	FORD	1.01	.87	.93	1.00	.96	.00	2.16	2.30	.94	.78	.00	1.19	1.42	.67	.32	1.21	1.02
16 230	CHEV	.83	1.23	1.08	.91	.80	.74	1.83	3.28	.87	.58	.21	1.10	1.37	.91	.37	1.05	1.09
27 208	CHEV	.79	1.16	.95	1.09	.68	.00	1.97	2.42	.91	.33	.71	1.20	.57	1.08	.15	1.12	1.00
38 223	DODGE	.99	.91	1.05	1.01	.80	.27	1.59	2.16	.94	.56	.20	1.16	.53	1.19	.32	1.15	1.17
39 214	FORD	1.26	.89	.80	1.11	.99	.00	1.82	3.90	.88	.86	.00	1.04	1.15	.78	.43	1.24	1.16
40 229	CHEV	.92	.81	1.04	1.13	.86	.00	1.64	7.57	.91	.61	.00	1.20	1.29	.81	.45	1.15	1.11
43 222	IHC	1.14	.74	1.04	1.05	.84	.33	1.47	1.88	.96	.84	.24	1.11	.58	1.15	.26	1.15	1.17
46 231	CHEV	.97	.82	1.03	1.09	.72	.00	1.28	1.77	1.02	.62	.00	1.27	1.43	.75	.22	1.22	.99
AVERAGE		1.01	.93	.97	1.07	.84	.17	1.54	2.71	.97	.67	.18	1.19	.99	.92	.31	1.20	1.07
CONF. LIM.		.89 TO 1.13	.82 TO 1.04	.88 TO 1.05	1.01 TO 1.12	.77 TO .91	-.01 TO .34	1.20 TO 1.87	1.33 TO 4.10	.90 TO 1.04	.55 TO .79	.02 TO .33	1.12 TO 1.26	.71 TO 1.27	.78 TO 1.05	.25 TO .38	1.10 TO 1.31	1.02 TO 1.13
STD. DEV.		.17	.15	.12	.08	.10	.25	.47	1.94	.10	.17	.22	.10	.39	.19	.09	.14	.07

Table VIII-20

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3

MODE VARIABLES RATIOS CHASSIS/ROAD

RUN NO.	TRUCK MAKE	PCT. TIME IDL.	PCT. TIME CRU.	PCT. TIME ACC.	PCT. TIME DEC.	PCT. CHNG. IDL. TO ACC.	PCT. CHNG. CRU. TO ACC.	PCT. CHNG. CRU. TO DEC.	PCT. CHNG. ACC. TO CRU.	PCT. CHNG. ACC. TO DEC.	PCT. CHNG. DEC. TO IDL.	PCT. CHNG. DEC. TO CRU.	PCT. CHNG. DEC. TO ACC.	PCT. TIME FULL POWER	PCT. TIME PART POWER	PCT. TIME DRIVEN POWER	PCT. TIME CLOSED POWER	AVG RPM
18 219	FORD	1.03	.71	1.36	1.16	1.02	1.94	.53	1.36	1.22	.68	.54	1.29	.97	.93	1.20	1.07	1.05
33 203	FORD	1.06	.93	.95	1.08	.68	1.86	.86	1.33	1.02	.70	.96	1.01	.85	1.08	.84	1.07	1.01
34 206	FORD	1.37	1.10	.88	.87	1.43	1.04	.82	.99	1.10	1.52	.72	.98	1.17	.91	.20	1.52	.98
35 207	CHEV	.86	.89	1.08	1.13	.96	1.61	.80	1.88	.93	.48	1.02	.94	1.63	.75	1.10	.89	1.03
37 212	GMC	.99	.88	1.05	1.10	.16	1.62	.72	1.71	1.15	.41	.72	1.51	.80	.99	.46	1.22	.96
42 205	FORD	1.17	.80	1.13	1.06	1.20	.68	.56	.77	1.38	.80	.62	1.56	.98	.99	.49	1.13	.98
44 227	CHEV	1.28	3.82	.79	.67	1.34	2.30	5.46	4.61	.71	2.01	1.80	.65	1.19	.90	.36	1.13	.95
45 224	CHEV	.80	.59	1.30	1.34	.88	.62	1.05	.97	1.08	.64	.85	1.28	.85	1.10	.00	1.10	.99
47 215	CHEV	1.01	.98	1.01	1.01	1.19	.00	.73	.00	1.33	.92	.80	1.27	1.23	.93	.35	1.05	.96
50 226	IHC	1.10	.92	.91	1.12	1.10	.31	.69	.31	1.40	1.01	.83	1.42	1.07	.98	.25	1.20	1.09
AVERAGE		1.07	1.16	1.05	1.05	1.00	1.20	1.22	1.39	1.13	.92	.89	1.19	1.07	.96	.53	1.14	1.00
CONF. LIM.		.94 TO 1.19	.49 TO 1.84	.92 TO 1.18	.93 TO 1.18	.73 TO 1.26	.64 TO 1.75	.15 TO 2.29	.48 TO 2.30	.98 TO 1.29	.56 TO 1.27	.63 TO 1.14	.98 TO 1.40	.90 TO 1.25	.89 TO 1.03	.24 TO .81	1.02 TO 1.25	.97 TO 1.03
STD. DEV.		.17	.94	.18	.18	.37	.77	1.50	1.27	.21	.50	.35	.29	.25	.10	.40	.16	.04

Table VIII-21

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4

MODE VARIABLES RATIOS CHASSIS/ROAD

RUN NO.	TRUCK MAKE	PCT. TIME IDL.	PCT. TIME CRU.	PCT. TIME ACC.	PCT. TIME DEC.	PCT. CHNG. IDL. TO ACC.	PCT. CHNG. CRU. TO ACC.	PCT. CHNG. CRU. TO DEC.	PCT. CHNG. ACC. TO CRU.	PCT. CHNG. ACC. TO DEC.	PCT. CHNG. DEC. TO IDL.	PCT. CHNG. DEC. TO CRU.	PCT. CHNG. DEC. TO ACC.	PCT. TIME FULL POWER	PCT. TIME PART POWER	PCT. TIME DRIVEN POWER	PCT. TIME CLOSED POWER	AVG RPM
05 201	CHEV	1.06	1.20	.66	.85	1.32	.00	1.11	.00	1.33	1.19	1.53	1.12	.68	1.19	.26	.88	.94
21 220	IHC	.78	1.04	.90	1.12	.76	.69	.85	.00	1.34	.23	1.28	1.25	.61	1.19	.65	.84	1.03
22 221	GMC	.71	1.13	.87	1.04	1.04	.00	1.19	.00	1.21	.53	1.63	1.07	.25	1.52	.29	.81	1.11
23 211	FORD	1.15	1.56	.52	.64	1.18	.00	1.34	.00	1.14	1.12	1.38	1.13	.44	1.54	.15	.90	.97
24 210	FORD	.98	1.02	.92	1.03	.79	.80	1.20	1.33	.92	.75	1.01	1.16	.33	1.32	.27	1.05	1.06
26 216	FORD	1.17	1.01	.90	.96	.98	.00	.99	.00	1.33	.92	1.22	1.23	.25	2.23	.36	.97	1.04
28 218	IHC	.86	1.02	.82	1.30	.55	.59	1.24	.00	1.08	.97	1.54	.94	.23	1.76	.09	.84	1.09
30 217	CHEV	.80	1.37	.60	.88	.87	.18	1.15	.27	1.21	.86	1.34	1.25	.21	1.76	.42	.55	.94
36 228	DODGE	.80	1.19	.77	1.01	.84	.00	1.21	.62	1.05	.79	1.27	1.15	.28	1.43	.33	.89	1.08
48 209	IHC	1.14	1.24	.80	.67	1.39	.00	1.37	.21	1.11	1.31	1.35	1.04	1.42	1.15	.42	.71	1.18
AVERAGE		.95	1.18	.78	.95	.97	.23	1.17	.24	1.17	.87	1.36	1.13	.47	1.51	.32	.84	1.04
CONF. LIM.		.82 TO 1.07	1.05 TO 1.31	.68 TO .88	.81 TO 1.09	.78 TO 1.16	-.01 TO .46	1.05 TO 1.28	-.07 TO .55	1.07 TO 1.27	.64 TO 1.10	1.23 TO 1.48	1.06 TO 1.20	.20 TO .74	1.27 TO 1.75	.21 TO .44	.75 TO .94	.99 TO 1.10
STD. DEV.		.18	.18	.14	.20	.26	.33	.15	.43	.14	.32	.18	.10	.37	.34	.16	.14	.08

Table VIII-22

HC AND CO CONCENTRATIONS FROM THE ROAD, MODE CYCLE, AND CALIFORNIA CYCLE

		HC-IR, ppm C				CO, vol %			
			Chassis	Calif. Cycle			Chassis	Calif. Cycle	
Make	No.	Road*	Cycle*	Bag*	Chart#	Road*	Cycle*	Bag*	Chart#
				(Group II)					
Chev.	2	7208	8456	1939	2050	3.35	3.88	2.41	2.56
	2	6771	8014	1907	1688	3.57	4.67	2.33	2.51
	3	8416	10,013	3991	2960	4.68	4.69	2.87	3.22
	3	8236	10,494	3061	2795	4.62	4.78	2.63	2.87
Ford	1	8908	8547	3563	2522	5.27	4.75	3.20	3.21
	1	8874	8506	3427	2607	4.83	4.39	3.16	3.18
	3	6628	9048	2499	2131	3.74	3.13	1.47	1.52
	3	6575	9822	2549	1922	3.96	3.17	1.48	1.51
GMC	1	8779	8386	2252	1828	2.77	1.97	1.80	1.76
	1	8104	9302	1845	1930	2.29	2.56	1.78	1.71
IHC	1	7752	7807	3221	2584	3.60	2.45	2.28	2.48
	1	8824	7984	3381	2585	3.62	2.53	2.28	2.43
	Average	7923	8865	2803	2300	3.78	3.58	2.31	2.41
				(Group III)					
Chev.	3	6852	5866	2908	1981	4.76	4.17	2.80	2.80
	3	6799	5706	2502	2055	4.51	3.88	2.63	2.83
	4	3844	3925	2190	1547	4.57	4.15	2.42	2.45
	4	3849	4399	1782	1613	4.47	4.24	2.24	2.40
Ford	1	4469	4909	2768	2142	3.40	3.77	2.42	2.25
	1	4483	4758	2471	2122	3.56	3.76	2.40	2.38
GMC	1	4890	4596	2087	1957	3.91	2.18	2.21	2.21
	1	5400	5043	2297	1972	3.87	1.90	2.49	2.31
IHC	1	6114	4799	2032	2296	2.79	2.30	2.28	2.55
	1	5894	4877	2109	2294	2.78	2.21	2.25	2.46
	Average	5259	4888	2315	1998	3.86	3.26	2.41	2.46
				(Group IV)					
Chev.	1	3954	3578	1868	1512	1.28	1.36	1.14	1.15
	1	4352	3313	2009	1618	1.43	1.33	1.17	1.17
Dodge	1	8063	6149	4592	2296	4.50	3.61	3.56	3.75
	1	8496	6286	4363	2236	4.72	3.49	3.81	3.87
Ford	1	7973	7242	4709	>3460**	2.60	2.35	3.03	3.15
	1	7659	6479	6390	>3042**	2.43	2.12	2.88	3.17
GMC	1	3634	2966	1901	1834	1.78	1.28	1.52	1.80
	1	3492	2947	1782	1894	1.72	1.08	1.48	1.81
IHC	2	5728	4051	3084	2440	3.24	2.21	2.51	2.73
	2	5580	3456	3216	2590	3.24	2.23	2.17	2.39
	Average	5893	4349	3391	2292	2.69	2.11	2.33	2.50

*Bag sample from Pace proportional sampler

#Four-cycle composite emissions

**Minimum value. Manifold-flooding anti-backfire device resulted in misfiring and HC concentrations beyond analyzer range during Sequence 9 deceleration

IX. SUPPLEMENTARY TESTS

Effect of Vehicle Load on DLA Road Results

The effect of vehicle load on exhaust emissions and mode variables in the median trucks was explored in a series of road tests performed between October 1966 and February 1967. In these tests, proportional bag exhaust samples and SLAVE data were obtained with the median trucks at three load conditions of no load, 50% load, and full load ("load" defined as percent of difference between GVW and empty weight of truck). The road route used was the same DLA route used for subsequent emission and SLAVE tests for all the trucks of the weight groups, and is described in Appendix A.

Tables IX-1 through IX-4 compare two-test replicate averages of pertinent emission and vehicle-parameter data at the three loads for each median truck. These tables also show the confidence limits (at the 95% probability level) for the variables presented, based on the standard deviations of the replicate tests*. Such statistical treatment of the data provided a basis for determining which no-load and full-load average values were significantly different from the half-load results. Significant differences are indicated by "yes" notations in the last two columns of the tables.

From an examination of the tables comparing emission and parameter variables at the three weight loads (Tables IX-1 through IX-4), it is seen that vehicle load apparently had no significant effect on the Group-I median truck, and only a minor effect on the Group II truck

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*Confidence limits of the emission averages were calculated using the Student-Newman-Keuls multiple comparison test:

$$\text{Confidence Limits} = 4.5 \left[\frac{\sigma_1 + \sigma_2 + \sigma_3}{3} \right]^{\frac{1}{2}}$$

where σ_1, σ_2, and σ_3 are the standard deviations of the replicate test values at the three loads (see Industrial Quality Control, September 1960).

(N_2-scaled HC concentrations were higher at full load than at half load). In the Group III truck, the significant and progressive increases in air and exhaust flow with load resulted in some scattered increases in mass emissions, although emissions concentrations generally were not affected by load. Similarly, the Group-IV median truck showed significant increases in air and exhaust flow with load. Although most emission concentrations except for CO and CO_2 also seemed to be affected by load in the Group IV truck, only NOx emissions showed a progressive effect of load; HC concentrations were consistently lower at half load than at either no load or full load. Such a trend defies explanation, but may be related to test variability resulting from running the half-load tests in February as opposed to the no-load and full-load tests which were run in November.

Tables IX-5 through IX-16 show the detailed two-run results from which the emission and parameter values in the summary load-comparison tables were taken. Run summaries for the individual tests are given in Appendix B.

With regard to vehicle modes at the three load conditions (summarized in Tables IX-17 through IX-20), the only consistent trend among all weight groups was the tendency for percent time at full power to increase with increased load. In Group III and IV median trucks, the increase with load was relatively large, suggesting that load may have a larger effect in the heavier trucks than in the light ones. The only other consistent correlation was percent time in idle, which tended to decrease with load in all groups except Group II. The data presented in the mode comparison tables was extracted from the computer print-outs of road SLAVE results (Appendix C under separate cover) and was not treated statistically.

Winter Emission Tests

Proportional bag samples of exhaust emissions were collected concurrently with the half-load SLAVE road tests that provided the

basic road-mode data used later in the cycle development work. These tests were performed between October 1966 and January 1967. Although it was the intention at that time to use the "winter" emission results as the criteria against which the mode-cycle emissions would be compared, rechecks of road emissions in several of the trucks during April showed that road emissions had changed appreciably because of differences in weather, mileage accumulation, or other factors. It was decided at that time to recheck road emissions on all the trucks (Group I excepted), and use these later "summer" results for direct back-to-back comparisons with the mode-cycle and California-cycle emission data.

Computer print-outs of group comparison results of "winter" emissions and vehicle parameters are given in Tables IX-21 through IX-32. Corresponding run summaries for each truck are given in Appendix B.

Additional California-Cycle Chart Data

Sections VII and VIII show most of the important results from the California-cycle tests--bag-sample results; ratio comparisons of cycle data to road data; and comparisons of four-cycle composite chart data to data from the road, the chassis-dynamometer mode cycle, and the California-cycle bag samples. Information from the California-cycle tests is further expanded in the computer print-outs of chart concentration data from the four individual cycles (two "cold" cycles and two "hot" cycles) comprising the California cycle. These print-outs are grouped as unnumbered tables at the rear of this section, and are arranged in order according to run number. (The reader is advised to consult Table VII-1 to relate the run numbers to specific vehicles and other tests in these vehicles.) It should be noted that the HC values reported in the California-cycle chart print-outs are given as ppm hexane. Selected HC values extracted from these print-outs for use in Table VIII-22 were converted to ppmC.

Table IX-1

EFFECT OF VEHICLE LOAD ON EMISSIONS AND VEHICLE PARAMETERS

Group I Median Truck -- Dodge 1

	Percent Load*			Conf.	Sig. Diff. From 50% Load?	
	0	50	100	Limit	No Load	100% Load
(Emission Concentrations, N_2-Scaled Data)						
HC, ppmC -						
Total (IR)	4968	4543	4987	2049		
Total (FID)	9577	9225	9602	4135		
Olef. (FID)	3369	3292	3443	1618		
Arom. (FID)	1816	1885	1893	812	None	
Paraf. (FID)	4392	4048	4266	1875		
NOx, ppm	1379	1218	1435	551		
CO, vol %	3.69	4.29	3.89	2.37		
CO_2, vol %	12.48	12.23	12.66	1.94		
(Mass Emissions, N_2-Scaled Data)						
HC, lb/mi -						
Total (IR)	0.0105	0.0110	0.0119	0.0067		
Total (FID)	0.0203	0.0224	0.0229	0.0138		
Olef. (FID)	0.0071	0.0080	0.0082	0.0050		
Arom. (FID)	0.0034	0.0042	0.0040	0.0022	None	
Paraf. (FID)	0.00[illegible]	0.0103	0.0107	0.0064		
NOx, lb/mi	0.0096	0.0098	0.0114	0.0034		
CO, lb/mi	0.1582	0.2102	0.1872	0.1293		
CO_2, lb/mi	0.8350	0.9430	0.9560	0.1490		
(Emission Concentrations, CO/CO_2-Scaled Data)						
HC, ppmC -						
Total (IR)	4968	4594	4987	1993		
Total (FID)	9577	9330	9602	4045		
Olef. (FID)	3369	3329	3443	1586		
Arom. (FID)	1816	1907	1893	796	None	
Paraf. (FID)	4392	4094	4266	1838		
NOx, ppm	1379	1233	1435	577		
CO, vol %	3.69	4.34	3.89	2.28		
CO_2, vol %	12.48	12.37	12.66	1.57		
(Mass Emissions, CO/CO_2-Scaled Data)						
HC, lb/mi -						
Total (IR)	0.0105	0.0122	0.0119	0.0066		
Total (FID)	0.0203	0.0227	0.0229	0.0137		
Olef. (FID)	0.0071	0.0081	0.0082	0.0050		
Arom. (FID)	0.0034	0.0042	0.0040	0.0022	None	
Paraf. (FID)	0.0097	0.0105	0.0107	0.0064		
NOx, lb/mi	0.0096	0.0100	0.0114	0.0038		
CO, lb/mi	0.1582	0.2125	0.1872	0.1255		
CO_2, lb/mi	0.8350	0.9540	0.9560	0.1381		
(Vehicle Parameters)						
A/F	12.94	12.73	12.90	0.80		
Air, SCF/mi	60.9	69.8	68.6	13.5		
Exhaust, SCF/mi	58.7	67.5	66.1	13.7	None	
Avg. Speed, mph	19.1	19.0	18.5	2.6		

*Percent of difference between GVW and empty weight of truck

Table IX-2

EFFECT OF VEHICLE LOAD ON EMISSIONS AND VEHICLE PARAMETERS

Group II Median Truck -- GMC 1

	Percent Load*			Conf.	Sig. Diff. From 50% Load?	
	0	50	100	Limit	No Load	100% Load
(Emission Concentrations, N_2-Scaled Data)						
HC, ppmC -						
Total (IR)	4770	4876	5799	907		Yes
Total (FID)	9082	9191	10,326	1175		Yes
Olef. (FID)	2148	2427	2360	828		
Arom. (FID)	2627	2511	2835	514		
Paraf. (FID)	4307	4253	5131	1504		
NOx, ppm	1284	1295	1318	382		
CO, vol %	3.10	3.43	2.96	0.60		
CO_2, vol %	12.13	12.22	12.32	0.76		
(Mass Emissions, N_2-Scaled Data)						
HC, lb/mi -						
Total (IR)	0.0766	0.0168	0.0226	0.0072		
Total (FID)	0.0316	0.0317	0.0403	0.0118		
Olef. (FID)	0.0074	0.0083	0.0092	0.0013		
Arom. (FID)	0.0085	0.0080	0.0101	0.0037		
Paraf. (FID)	0.0157	0.0154	0.0210	0.0091	None	
NOx, lb/mi	0.0148	0.0148	0.0171	0.0032		
CO, lb/mi	0.2174	0.2385	0.2332	0.0619		
CO_2, lb/mi	1.3370	1.3360	1.5250	0.2565		
(Emission Concentrations, CO/CO_2-Scaled Data)						
HC, ppmC -						
Total (IR)	4951	4956	5975	1214		
Total (FID)	9426	9342	10,637	1737		
Olef. (FID)	2228	2465	2431	728		
Arom. (FID)	2727	2552	2921	694		
Paraf. (FID)	4470	4326	5286	1758	None	
NOx, ppm	1332	1315	1357	335		
CO, vol %	3.22	3.49	3.05	0.53		
CO_2, vol %	12.59	12.41	12.69	0.36		
(Mass Emissions, CO/CO_2-Scaled Data)						
HC, lb/mi -						
Total (IR)	0.0172	0.0172	0.0233	0.0085		
Total (FID)	0.0328	0.0322	0.0415	0.0140		
Olef. (FID)	0.0077	0.0085	0.0095	0.0015		
Arom. (FID)	0.0087	0.0081	0.0104	0.0043		
Paraf. (FID)	0.0163	0.0157	0.0216	0.0103	None	
NOx, lb/mi	0.0154	0.0150	0.0176	0.0036		
CO, lb/mi	0.2257	0.2424	0.2402	0.0717		
CO_2, lb/mi	1.3870	1.3580	1.5710	0.3427		
(Vehicle Parameters)						
A/F	13.12	13.01	13.18	0.20		
Air, SCF/mi	100.6	99.6	113.1	24.8		
Exhaust, SCF/mi	96.6	95.8	108.4	23.9	None	
Avg. Speed, mph	19.4	19.4	19.0	1.9		

*Percent of difference between GVW and empty weight of truck

Table IX-3

EFFECT OF VEHICLE LOAD ON EMISSIONS AND VEHICLE PARAMETERS

Group III Median Truck -- Ford 3

	Percent Load*			Conf.	Sig. Diff. From 50% Load?	
	0	50	100	Limit	No Load	100% Load
(Emission Concentrations, N_2-Scaled Data)						
HC, ppmC -						
Total (IR)	6675	6858	6185	1170		
Total (FID)	11,577	11,386	10,241	2543		
Olef. (FID)	2102	2453	1717	856		
Arom. (FID)	3728	3280	3296	366	Yes	
Paraf. (FID)	5746	5653	5228	1476		
NOx, ppm	1747	1943	1950	463		
CO, vol %	2.37	2.19	2.50	0.58		
CO_2, vol %	12.31	12.43	12.67	1.39		
(Mass Emissions, N_2-Scaled Data)						
HC, lb/mi -						
Total (IR)	0.0397	0.0479	0.0506	0.0027	Yes	Yes
Total (FID)	0.0688	0.0795	0.0838	0.0091	Yes	
Olef. (FID)	0.0125	0.0171	0.0140	0.0036	Yes	
Arom. (FID)	0.0206	0.0210	0.0249	0.0028		Yes
Paraf. (FID)	0.0359	0.0415	0.0449	0.0061		
NOx, lb/mi	0.0345	0.0452	0.0531	0.0150		
CO, lb/mi	0.2858	0.3088	0.4137	0.0745		Yes
CO_2, lb/mi	2.3270	2.7600	3.2940	0.5973		
(Emission Concentrations, CO/CO_2-Scaled Data)						
HC, ppmC -						
Total (IR)	7068	7248	6354	1741		
Total (FID)	12,258	12,036	10,523	3571		
Olef. (FID)	2226	2594	1764	1052		
Arom. (FID)	3947	3466	3386	686		
Paraf. (FID)	6085	5975	5373	1990	None	
NOx, ppm	1849	2051	2003	438		
CO, vol %	2.51	2.32	2.57	0.71		
CO_2, vol %	13.03	13.12	13.00	0.33		
(Mass Emissions, CO/CO_2-Scaled Data)						
HC, lb/mi -						
Total (IR)	0.0420	0.0507	0.0520	0.0074	Yes	
Total (FID)	0.0729	0.0841	0.0862	0.0172		
Olef. (FID)	0.0132	0.0181	0.0144	0.0052		
Arom. (FID)	0.0218	0.0222	0.0256	0.0040		
Paraf. (FID)	0.0379	0.0438	0.0461	0.0105		
NOx, lb/mi	0.0366	0.0477	0.0545	0.0143		
CO, lb/mi	0.3025	0.3264	0.4248	0.0867		Yes
CO_2, lb/mi	2.4630	2.9140	3.3810	0.3820	Yes	
(Vehicle Parameters)						
A/F	13.40	13.48	13.37	0.31		
Air, SCF/mi	173.4	204.1	238.6	24.6	Yes	Yes
Exhaust, SCF/mi	165.5	194.4	227.7	22.9	Yes	Yes
Avg. Speed, mph	19.6	19.1	19.6	3.4		

*Percent of difference between GVW and empty weight of truck

Table IX-4

EFFECT OF VEHICLE LOAD ON EMISSIONS AND VEHICLE PARAMETERS

Group IV Median Truck -- Chevrolet 1

	Percent Load*			Conf.	Sig. Diff. From 50% Load?	
	0	50	100	Limit	No Load	100% Load
(Emission Concentrations, N_2-Scaled Data)						
HC, ppmC -						
Total (IR)	5002	3496	4487	725	Yes	Yes
Total (FID)	8550	6269	7632	782	Yes	Yes
Olef. (FID)	1735	2037	1575	415		Yes
Arom. (FID)	2511	1678	2253	448	Yes	Yes
Paraf. (FID)	4304	2553	3804	825	Yes	Yes
NOx, ppm	1313	1632	2217	94	Yes	Yes
CO, vol %	1.33	1.38	1.62	0.49		
CO_2, vol %	12.77	13.09	12.35	1.40		
(Mass Emissions, N_2-Scaled Data)						
HC, lb/mi -						
Total (IR)	0.0270	0.0238	0.0350	0.0031	Yes	Yes
Total (FID)	0.0460	0.0427	0.0595	0.0028	Yes	Yes
Olef. (FID)	0.0094	0.0139	0.0123	0.0031	Yes	
Arom. (FID)	0.0124	0.0106	0.0162	0.0024		Yes
Paraf. (FID)	0.0244	0.0182	0.0311	0.0044	Yes	Yes
NOx, lb/mi	0.0235	0.0369	0.0574	0.0049	Yes	Yes
CO, lb/mi	0.1443	0.1895	0.2553	0.0778		
CO_2, lb/mi	2.1830	2.8300	3.0550	0.1632	Yes	Yes
(Emission Concentrations, CO/CO_2-Scaled Data)						
HC, ppmC -						
Total (IR)	5265	3589	4845	360	Yes	Yes
Total (FID)	9002	6435	8241	342	Yes	Yes
Olef. (FID)	1826	2092	1700	373		Yes
Arom. (FID)	2647	1722	2433	604	Yes	Yes
Paraf. (FID)	4529	2621	4107	632	Yes	Yes
NOx, ppm	1383	1675	2394	200	Yes	Yes
CO, vol %	1.40	1.42	1.75	0.60		
CO_2, vol %	13.44	13.43	13.34	0.17		
(Mass Emissions, CO/CO_2-Scaled Data)						
HC, lb/mi -						
Total (IR)	0.0284	0.0245	0.0378	0.0023	Yes	Yes
Total (FID)	0.0485	0.0438	0.0642	0.0039	Yes	Yes
Olef. (FID)	0.0098	0.0142	0.0133	0.0035	Yes	
Arom. (FID)	0.0131	0.0109	0.0174	0.0035		Yes
Paraf. (FID)	0.0256	0.0187	0.0336	0.0039	Yes	Yes
NOx, lb/mi	0.0248	0.0379	0.0619	0.0073	Yes	Yes
CO, lb/mi	0.1520	0.1949	0.2757	0.0934		
CO_2, lb/mi	2.2990	2.9050	3.2990	0.1946	Yes	Yes
(Vehicle Parameters)						
A/F	13.98	13.97	13.74	0.46		
Air, SCF/mi	158.8	200.8	228.6	13.7	Yes	Yes
Exhaust, SCF/mi	149.8	189.4	216.6	14.1	Yes	Yes
Avg. Speed, mph	20.5	20.9	20.3	1.8		

*Percent of difference between GVW and empty weight of truck

Table IX-5

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 1 DLA ROAD 1966 NO LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
11-1	DODGE	5123	10118	3699	1850	4569	1245	4.16	12.14	.0113	.0223	.0081	.0036	.0105	.0091	.1850	.848
11-3	DODGE	4813	9037	3039	1782	4216	1514	3.22	12.81	.0097	.0182	.0061	.0032	.0089	.0101	.1314	.821
AVERAGE		4968	9577	3369	1816	4392	1379	3.69	12.48	.0105	.0203	.0071	.0034	.0097	.0096	.1582	.835
CONF. LIM.		2998 TO 6937	2709 TO 16445	-823 TO 7561	1383 TO 2248	2149 TO 6635	-329 TO 3088	-2.28 TO 9.66	8.22 TO 16.73	.0003 TO .0207	-.0058 TO .0463	-.0056 TO .0198	.0009 TO .0059	-.0005 TO .0199	.0032 TO .0160	-.1823 TO .4987	.663 TO 1.006
STD. DEV.		219	764	466	48	249	190	.66	.47	.0011	.0029	.0014	.0003	.0011	.0007	.0379	.019

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
11-1	DODGE	5123	10118	3699	1850	4569	1245	4.16	12.14	.0113	.0223	.0081	.0036	.0105	.0091	.1850	.848
11-3	DODGE	4813	9037	3039	1782	4216	1514	3.22	12.81	.0097	.0182	.0061	.0032	.0089	.0101	.1314	.821
AVERAGE		4968	9577	3369	1816	4392	1379	3.69	12.48	.0105	.0203	.0071	.0034	.0097	.0096	.1582	.835
CONF. LIM.		2998 TO 6937	2709 TO 16445	-823 TO 7561	1383 TO 2248	2149 TO 6635	-329 TO 3088	-2.28 TO 9.66	8.22 TO 16.73	.0003 TO .0207	-.0058 TO .0463	-.0056 TO .0198	.0009 TO .0059	-.0005 TO .0199	.0032 TO .0160	-.1823 TO .4987	.663 TO 1.006
STD. DEV.		219	764	466	48	249	190	.66	.47	.0011	.0029	.0014	.0003	.0011	.0007	.0379	.019

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
11-1	DODGE	225 I-6	5200	1.20	12.74	12.84	12.79	12.75	53	2190	63.2	61.2	18.6	-3.8
11-3	DODGE	225 I-6	5200	1.82	13.11	13.26	13.18	13.13	35	2248	58.5	56.1	19.7	-6.4
AVERAGE				1.51	12.93	13.05	12.99	12.94	44	2219	60.9	58.7	19.1	-5.1
CONF. LIM.				-2.43 TO 5.45	10.57 TO 15.28	10.38 TO 15.72	10.51 TO 15.46	10.53 TO 15.35	-70 TO 158	1850 TO 2587	31.0 TO 90.7	26.2 TO 91.1	12.2 TO 26.1	-21.6 TO 11.4
STD. DEV.				.44	.26	.30	.28	.27	12	41	3.3	3.6	.8	1.8

Table IX-6

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 1 DLA ROAD 1966 HALF LOAD

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
9-2	DODGE	4733	9539	3416	1940	4184	1152	4.70	12.64	.0113	.0228	.0082	.0042	.0105	.0091	.2270	.959
9-3	DODGE	4354	8912	3169	1831	3913	1284	3.88	11.82	.0107	.0220	.0078	.0041	.0101	.0105	.1934	.927
AVERAGE		4543	9225	3292	1885	4048	1218	4.29	12.23	.0110	.0224	.0080	.0042	.0103	.0098	.2102	.943
CONF. LIM.		2135 TO 6951	5242 TO 13208	1723 TO 4861	1193 TO 2577	2326 TO 5770	379 TO 2056	-.92 TO 9.50	7.02 TO 17.44	.0072 TO .0148	.0173 TO .0275	.0055 TO .0105	.0035 TO .0048	.0078 TO .0128	.0009 TO .0187	-.0033 TO .4237	.740 TO 1.146
STD. DEV.		267	443	174	77	191	93	.58	.58	.0004	.0006	.0003	.0001	.0003	.0010	.0238	.023

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
9-2	DODGE	4733	9539	3416	1940	4184	1152	4.70	12.64	.0113	.0228	.0082	.0042	.0105	.0091	.2270	.959
9-3	DODGE	4456	9121	3243	1874	4004	1314	4.97	12.10	.0110	.0225	.0080	.0041	.0104	.0108	.1980	.948
AVERAGE		4594	9330	3329	1907	4094	1233	4.34	12.37	.0112	.0227	.0081	.0042	.0105	.0100	.2125	.954
CONF. LIM.		2834 TO 6354	6674 TO 11985	2230 TO 4428	1487 TO 2326	2950 TO 5237	203 TO 2262	-.30 TO 8.97	8.94 TO 15.80	.0092 TO .0131	.0207 TO .0246	.0068 TO .0094	.0035 TO .0048	.0098 TO .0111	-.0009 TO .0208	.0283 TO .3967	.884 TO 1.023
STD. DEV.		195	295	122	46	127	114	.52	.38	.0002	.0002	.0001	.0001	.0001	.0012	.0205	.008

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
9-2	DODGE	225 I-6	5200	1.22	12.52	13.15	12.84	12.64	55	1965	68.5	66.4	18.6	-27.2
9-3	DODGE	225 I-6	5200	1.11	12.45	12.64	12.74	12.81	52	1987	71.0	68.6	19.5	6.9
AVERAGE				1.17	12.49	12.90	12.79	12.73	53	1976	69.8	67.5	19.0	-10.2
CONF. LIM.				.47 TO 1.86	10.59 TO 14.78	9.65 TO 16.14	12.15 TO 13.43	11.64 TO 13.81	34 TO 72	1836 TO 2115	53.9 TO 85.6	53.5 TO 81.5	13.9 TO 24.2	-226.8 TO 206.5
STD. DEV.				.08	.23	.36	.07	.12	2	15	1.8	1.6	.6	24.1

Table IX-7

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 1 DLA ROAD 1966 FULL LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
12-1	DODGE	4486	8666	3178	1682	3806	1447	3.71	12.69	.0103	.0198	.0073	.0034	.0091	.0110	.1717	.921
12-2	DODGE	5489	10539	3709	2105	4726	1423	4.06	12.63	.0135	.0260	.0091	.0046	.0122	.0117	.2026	.990
AVERAGE		4987	9602	3443	1893	4266	1435	3.89	12.66	.0119	.0229	.0082	.0040	.0107	.0114	.1872	.956
CONF. LIM.		-1384 TO 11359	-2296 TO 21501	70 TO 6816	-793 TO 4580	-1578 TO 10110	1282 TO 1587	1.66 TO 6.11	12.28 TO 13.04	-.0084 TO .0322	-.0165 TO .0623	-.0032 TO .0196	-.0036 TO .0116	-.0090 TO .0303	.0069 TO .0158	-.0092 TO .3835	.517 TO 1.394
STD. DEV.		709	1324	375	299	650	16	.25	.04	.0023	.0044	.0013	.0008	.0022	.0005	.0218	.049

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
12-1	DODGE	4486	8666	3178	1682	3806	1447	3.71	12.69	.0103	.0198	.0073	.0034	.0091	.0110	.1717	.921
12-2	DODGE	5489	10539	3709	2105	4726	1423	4.06	12.63	.0135	.0260	.0091	.0046	.0122	.0117	.2026	.990
AVERAGE		4987	9602	3443	1893	4266	1435	3.89	12.66	.0119	.0229	.0082	.0040	.0107	.0114	.1872	.956
CONF. LIM.		-1384 TO 11359	-2296 TO 21501	70 TO 6816	-793 TO 4580	-1578 TO 10110	1282 TO 1587	1.66 TO 6.11	12.28 TO 13.04	-.0084 TO .0322	-.0165 TO .0623	-.0032 TO .0196	-.0036 TO .0116	-.0090 TO .0303	.0069 TO .0158	-.0092 TO .3835	.517 TO 1.394
STD. DEV.		709	1324	375	299	650	16	.25	.04	.0023	.0044	.0013	.0008	.0022	.0005	.0218	.049

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
12-1	DODGE	225 I-6	5200	1.51	12.91	13.18	13.05	12.96	46	2270	66.0	63.6	18.4	-10.9
12-2	DODGE	225 I-6	5200	1.46	12.78	13.15	12.96	12.84	50	2292	71.1	68.6	18.7	-14.5
AVERAGE				1.49	12.85	13.17	13.01	12.90	48	2281	68.6	66.1	18.5	-12.7
CONF. LIM.				1.17 TO 1.80	12.02 TO 13.67	12.97 TO 13.36	12.43 TO 13.58	12.14 TO 13.66	22 TO 73	2141 TO 2420	36.1 TO 101.0	34.3 TO 97.9	16.8 TO 20.3	-35.6 TO 10.2
STD. DEV.				.04	.09	.02	.06	.08	2	15	3.6	3.5	.2	2.5

Table IX-8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 DLA ROAD 1966 NO LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
14-1	GMC	4635	8905	2226	2521	4158	1305	3.11	12.32	.0153	.0294	.0073	.0077	.0144	.0143	.2074	1.292
14-2	GMC	4905	9260	2071	2733	4456	1264	3.09	11.94	.0179	.0337	.0075	.0092	.0170	.0153	.2274	1.381
AVERAGE		4770	9082	2148	2627	4307	1284	3.10	12.13	.0166	.0316	.0074	.0085	.0157	.0148	.2174	1.337
CONF. LIM.		3054 TO 6485	6827 TO 11337	1163 TO 3133	1280 TO 3973	2413 TO 6200	1024 TO 1544	2.97 TO 3.23	9.72 TO 14.54	.0001 TO .0331	.0042 TO .0589	.0061 TO .0087	-.0011 TO .0180	-.0008 TO .0322	.0084 TO .0212	.0903 TO .3445	.771 TO 1.902
STD. DEV.		190	251	109	149	210	28	.01	.27	.0018	.0030	.0001	.0011	.0018	.0007	.0141	.063

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
14-1	GMC	4741	9109	2277	2579	4253	1335	3.18	12.61	.0156	.0301	.0075	.0078	.0147	.0146	.2121	1.321
14-2	GMC	5161	9743	2179	2875	4688	1330	3.25	12.56	.0188	.0355	.0079	.0096	.0179	.0161	.2392	1.453
AVERAGE		4951	9426	2228	2727	4470	1332	3.22	12.59	.0172	.0328	.0077	.0087	.0163	.0154	.2257	1.387
CONF. LIM.		2282 TO 7619	5398 TO 13453	1605 TO 2850	846 TO 4607	1706 TO 7234	1300 TO 1364	2.77 TO 3.66	12.27 TO 12.90	-.0031 TO .0375	-.0015 TO .0671	.0052 TO .0102	-.0027 TO .0201	-.0040 TO .0366	.0058 TO .0249	.0535 TO .3978	.548 TO 2.226
STD. DEV.		296	448	69	209	307	3	.05	.04	.0023	.0038	.0003	.0013	.0023	.0011	.0192	.093

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
14-1	GMC	305 V-6	7500	1.63	13.16	12.95	13.05	13.13	65	41005	95.7	91.8	19.8	5.8
14-2	GMC	305 V-6	7500	1.56	13.16	12.71	12.94	13.10	65	41028	105.5	101.3	19.0	11.9
AVERAGE				1.60	13.16	12.83	13.00	13.12	65	41016	100.6	96.6	19.4	8.9
CONF. LIM.				1.15 TO 2.04	13.16 TO 13.16	11.31 TO 14.35	12.30 TO 13.69	12.92 TO 13.31	65 TO 65	40860 TO 41172	38.3 TO 162.9	36.2 TO 156.9	14.0 TO 24.8	-29.9 TO 47.6
STD. DEV.				.05	.00	.17	.08	.02	0	17	6.9	6.7	.6	4.3

Table IX-9

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 DLA ROAD 1966 HALF LOAD

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
6-1	GMC	4670	8925	2633	2420	3872	1387	3.50	12.29	.0153	.0293	.0086	.0073	.0133	.0151	.2321	1.282
6-2	GMC	5082	9458	2222	2602	4634	1203	3.36	12.14	.0183	.0341	.0080	.0086	.0175	.0144	.2449	1.389
AVERAGE		4876	9191	2427	2511	4253	1295	3.43	12.22	.0168	.0317	.0083	.0080	.0154	.0148	.2385	1.336
CONF. LIM.		2258 TO 7493	5805 TO 12577	-183 TO 5038	1354 TO 3667	-587 TO 9093	126 TO 2463	2.54 TO 4.32	11.26 TO 13.17	-.0023 TO .0359	.0012 TO .0622	.0045 TO .0121	-.0003 TO .0162	-.0113 TO .0421	.0103 TO .0192	.1572 TO .3198	.656 TO 2.015
STD. DEV.		291	376	290	128	538	130	.10	.11	.0021	.0034	.0004	.0009	.0030	.0005	.0091	.076

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
6-1	GMC	4706	8994	2653	2439	3983	1398	3.52	12.39	.0155	.0295	.0087	.0074	.0134	.0152	.2339	1.292
6-2	GMC	5207	9691	2277	2666	4749	1233	3.45	12.43	.0188	.0349	.0082	.0088	.0179	.0148	.2509	1.423
AVERAGE		4956	9342	2465	2552	4326	1315	3.49	12.41	.0172	.0322	.0085	.0081	.0157	.0150	.2424	1.358
CONF. LIM.		1773 TO 8139	4914 TO 13770	76 TO 4853	1110 TO 3994	-1048 TO 9700	267 TO 2363	3.04 TO 3.93	12.16 TO 12.66	-.0038 TO .0381	-.0021 TO .0665	.0053 TO .0116	-.0008 TO .0170	-.0129 TO .0442	.0125 TO .0175	.1344 TO .3504	.525 TO 2.190
STD. DEV.		354	492	265	160	598	116	.05	.03	.0023	.0038	.0004	.0010	.0032	.0003	.0120	.093

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
6-1	GMC	305 V-6	7500	1.45	13.00	12.93	12.97	12.99	92	40269	94.9	91.3	19.1	2.1
6-2	GMC	305 V-6	7500	1.39	13.05	12.83	12.94	13.02	88	40293	104.2	100.2	19.7	5.9
AVERAGE				1.42	13.03	12.88	12.96	13.01	90	40281	99.6	95.8	19.4	4.0
CONF. LIM.				1.04 TO 1.80	12.71 TO 13.34	12.24 TO 13.52	12.76 TO 13.15	12.81 TO 13.20	64 TO 115	40125 TO 40436	40.5 TO 158.6	39.2 TO 152.3	16.2 TO 22.6	-20.1 TO 28.1
STD. DEV.				.04	.04	.07	.02	.02	2	17	6.6	6.3	.4	2.7

Table IX-10

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 DLA ROAD 1966 FULL LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
15-1	GMC	5777	10332	2414	2817	5102	1363	3.10	12.29	.0226	.0404	.0094	.0100	.0209	.0177	.2451	1.526
15-2	GMC	5821	10320	2307	2853	5160	1273	2.81	12.34	.0226	.0401	.0090	.0101	.0210	.0164	.2212	1.524
AVERAGE		5799	10326	2360	2835	5131	1318	2.96	12.32	.0226	.0403	.0092	.0101	.0210	.0171	.2332	1.525
CONF. LIM.		5519 TO 6078	10250 TO 10401	1680 TO 3040	2606 TO 3063	4762 TO 5499	746 TO 1889	1.11 TO 4.80	12.00 TO 12.63	.0226 TO .0226	.0383 TO .0422	.0067 TO .0117	.0094 TO .0107	.0203 TO .0216	.0088 TO .0253	.0813 TO .3850	1.512 TO 1.538
STD. DEV.		31	8	75	25	41	63	.21	.04	.0000	.0002	.0003	.0001	.0001	.0009	.0169	.001

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
15-1	GMC	5923	10592	2474	2888	5230	1397	3.18	12.60	.0231	.0414	.0097	.0103	.0214	.0181	.2513	1.564
15-2	GMC	6027	10683	2388	2954	5342	1317	2.91	12.78	.0234	.0415	.0093	.0105	[illegible]	.0170	.2290	1.578
AVERAGE		5975	10637	2431	2921	5286	1357	3.05	12.69	.0233	.0415	.0095	.0104	.0216	.0176	.2402	1.571
CONF. LIM.		5314 TO 6635	10059 TO 11215	1884 TO 2977	2501 TO 3340	4574 TO 5997	848 TO 1865	1.33 TO 4.76	11.55 TO 13.83	.0213 TO .0252	.0408 TO .0421	.0070 TO .0120	.0091 TO .0117	.0191 TO .0241	.0106 TO .0245	.0985 TO .3818	1.482 TO 1.660
STD. DEV.		73	64	60	46	79	56	.19	.13	.0002	.0001	.0003	.0001	.0003	.0008	.0158	.010

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
15-1	GMC	305 V-6	7500	1.60	13.16	12.93	13.05	13.13	72	41051	113.2	108.6	18.8	5.7
15-2	GMC	305 V-6	7500	1.68	13.27	12.96	13.12	13.23	78	41074	112.9	108.1	19.1	7.8
AVERAGE				1.64	13.22	12.95	13.09	13.18	75	41062	113.1	108.4	19.0	6.8
CONF. LIM.				1.13 TO 2.15	12.52 TO 13.91	12.75 TO 13.14	12.64 TO 13.53	12.54 TO 13.82	36 TO 113	40906 TO 41218	111.1 TO 115.0	105.2 TO 111.5	17.2 TO 20.7	-6.6 TO 20.1
STD. DEV.				.06	.08	.02	.05	.07	4	17	.2	.4	.2	1.5

Table IX-11

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 DLA ROAD 1966 NO LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
31-2	FORD	6912	12021	2254	3724	6043	1721	2.30	12.27	.0401	.0697	.0131	.0199	.0368	.0331	.2701	2.261
31-1	FORD	6438	11133	1951	3732	5450	1774	2.44	12.34	.0393	.0679	.0119	.0212	.0349	.0359	.3015	2.392
AVERAGE		6675	11577	2102	3728	5746	1747	2.37	12.31	.0397	.0688	.0125	.0206	.0359	.0345	.2858	2.327
CONF. LIM.		3663 TO 9686	5935 TO 17218	177 TO 4027	3677 TO 3778	1979 TO 9513	1410 TO 2084	1.48 TO 3.26	11.86 TO 12.75	.0346 TO .0448	.0574 TO .0802	.0049 TO .0201	.0123 TO .0288	.0238 TO .0479	.0167 TO .0523	.0863 TO .4853	1.494 TO 3.159
STD. DEV.		335	627	214	5	419	37	.10	.05	.0006	.0013	.0008	.0009	.0013	.0020	.0222	.093

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
31-2	FORD	7359	12798	2400	3965	6433	1832	2.45	13.06	.0427	.0742	.0139	.0212	.0391	.0353	.2876	2.407
31-1	FORD	6777	11719	2053	3929	5737	1867	2.57	12.99	.0413	.0715	.0125	.0223	.0367	.0378	.3174	2.518
AVERAGE		7068	12258	2226	3947	6085	1849	2.51	13.03	.0420	.0729	.0132	.0218	.0379	.0366	.3025	2.463
CONF. LIM.		3370 TO 10765	5403 TO 19113	22 TO 4430	3718 TO 4175	1663 TO 10506	1627 TO 2071	1.75 TO 3.27	12.58 TO 13.47	.0331 TO .0509	.0557 TO .0900	.0043 TO .0221	.0148 TO .0287	.0227 TO .0531	.0207 TO .0524	.1132 TO .4918	1.757 TO 3.168
STD. DEV.		411	762	245	25	492	24	.08	.05	.0010	.0019	.0010	.0008	.0017	.0018	.0211	.078

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
31-2	FORD	330 V-8	20000	2.38	13.48	13.14	13.31	13.42	59	2120	169.1	161.3	20.0	13.9
31-1	FORD	330 V-8	20000	2.30	13.42	12.96	13.19	13.37	63	2098	177.7	169.7	19.2	11.3
AVERAGE				2.34	13.45	13.05	13.25	13.40	61	2109	173.4	165.5	19.6	12.6
CONF. LIM.				1.83 TO 2.85	13.07 TO 13.83	11.91 TO 14.19	12.49 TO 14.01	13.08 TO 13.71	35 TO 86	1969 TO 2248	118.8 TO 228.0	112.1 TO 218.9	15.0 TO 24.2	-3.9 TO 29.1
STD. DEV.				.06	.04	.13	.08	.04	2	15	6.1	5.9	.5	1.8

Table IX-12

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 DLA ROAD 1966 HALF LOAD

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
33-1	FORD	6674	10938	2279	3210	5450	2066	2.05	12.66	.0477	.0782	.0163	.0211	.0409	.0490	.2962	2.874
33-2	FORD	7042	11834	2627	3350	5857	1821	2.33	12.19	.0481	.0808	.0179	.0209	.0420	.0413	.3213	2.645
AVERAGE		6858	11386	2453	3280	5653	1943	2.19	12.43	.0479	.0795	.0171	.0210	.0415	.0452	.3088	2.760
CONF. LIM.		4520 TO 9195	5693 TO 17078	242 TO 4663	2390 TO 4169	3067 TO 8239	387 TO 3499	.41 TO 3.97	9.44 TO 15.41	.0454 TO .0504	.0630 TO .0960	.0069 TO .0273	.0197 TO .0223	.0345 TO .0484	-.0038 TO .0941	.1493 TO .4682	1.305 TO 4.214
STD. DEV.		260	633	246	98	287	173	.20	.33	.0003	.0018	.0011	.0001	.0008	.0054	.0177	.162

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
33-1	FORD	6962	11411	2378	3348	5685	2155	2.14	13.20	.0498	.0816	.0170	.0220	.0426	.0512	.3090	2.998
33-2	FORD	7534	12662	2811	3585	6266	1948	2.49	13.04	.0515	.0865	.0192	.0224	.0449	.0442	.3437	2.830
AVERAGE		7248	12036	2594	3466	5975	2051	2.32	13.12	.0507	.0841	.0181	.0222	.0438	.0477	.3264	2.914
CONF. LIM.		3614 TO 10881	4088 TO 19984	-156 TO 5345	1960 TO 4972	2284 TO 9666	736 TO 3366	.09 TO 4.54	12.10 TO 14.14	.0398 TO .0615	.0529 TO .1152	.0041 TO .0321	.0197 TO .0247	.0291 TO .0584	.0032 TO .0922	.1059 TO .5468	1.847 TO 3.981
STD. DEV.		404	884	306	167	410	146	.25	.11	.0012	.0035	.0016	.0003	.0016	.0049	.0245	.119

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
33-1	FORD	330 V-8	20000	2.41	13.58	13.22	13.40	13.55	39	2188	209.0	198.8	19.8	10.7
33-2	FORD	330 V-8	20000	2.48	13.47	13.12	13.30	13.40	39	2210	199.1	189.9	18.3	17.8
AVERAGE				2.45	13.53	13.17	13.35	13.48	39	2199	204.1	194.4	19.1	14.3
CONF. LIM.				2.00 TO 2.89	12.83 TO 14.22	12.53 TO 13.81	12.71 TO 13.99	12.52 TO 14.43	39 TO 39	2059 TO 2338	141.2 TO 266.9	137.8 TO 250.9	9.1 TO 29.0	-30.9 TO 59.4
STD. DEV.				.05	.08	.07	.07	.11	0	15	7.0	6.3	1.1	5.0

IX-15

Table IX-13

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 DLA ROAD 1966 FULL LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
32-1	FORD	6078	9954	1683	3224	5048	1935	2.50	12.96	.0500	.0819	.0138	.0245	.0436	.0529	.4165	3.388
32-2	FORD	6293	10528	1751	3368	5409	1966	2.50	12.37	.0512	.0857	.0142	.0253	.0462	.0532	.4109	3.199
AVERAGE		6185	10241	1717	3296	5228	1950	2.50	12.67	.0506	.0838	.0140	.0249	.0449	.0531	.4137	3.294
CONF. LIM.		4819 TO 7551	6594 TO 13887	1284 TO 2149	2381 TO 4210	2935 TO 7521	1753 TO 2147	2.50 TO 2.50	8.92 TO 16.41	.0430 TO .0582	.0597 TO .1079	.0115 TO .0165	.0198 TO .0300	.0284 TO .0614	.0511 TO .0550	.3781 TO .4493	2.093 TO 4.494
STD. DEV.		152	405	48	101	255	21	.00	.42	.0008	.0027	.0003	.0006	.0018	.0002	.0040	.134

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
32-1	FORD	6112	10010	1692	3242	5076	1946	2.52	13.03	.0503	.0824	.0139	.0247	.0438	.0532	.4189	3.407
32-2	FORD	6597	11037	1836	3530	5671	2061	2.62	12.97	.0537	.0899	.0149	.0265	.0484	.0557	.4307	3.354
AVERAGE		6354	10523	1764	3386	5373	2003	2.57	13.00	.0520	.0862	.0144	.0256	.0461	.0545	.4248	3.381
CONF. LIM.		3273 TO 9435	3998 TO 17048	849 TO 2678	1556 TO 5215	1593 TO 9153	1272 TO 2734	1.93 TO 3.21	12.62 TO 13.38	.0304 TO .0736	.0385 TO .1338	.0080 TO .0208	.0142 TO .0370	.0169 TO .0753	.0386 TO .0703	.3498 TO .4998	3.044 TO 3.717
STD. DEV.		342	726	101	203	420	81	.07	.04	.0024	.0053	.0007	.0013	.0033	.0018	.0083	.037

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
32-1	FORD	330 V-8	20000	2.21	13.40	13.35	13.37	13.39	43	2144	239.9	228.9	19.2	1.2
32-2	FORD	330 V-8	20000	2.21	13.40	12.98	13.19	13.35	40	2166	237.2	226.5	20.0	9.5
AVERAGE				2.21	13.40	13.17	13.28	13.37	41	2155	238.6	227.7	19.6	5.4
CONF. LIM.				2.21 TO 2.21	13.40 TO 13.40	10.81 TO 15.52	12.14 TO 14.42	13.12 TO 13.62	22 TO 60	2015 TO 2294	221.4 TO 255.7	212.5 TO 242.9	14.8 TO 24.4	-47.4 TO 58.1
STD. DEV.				.00	.00	.26	.13	.03	2	15	1.9	1.7	.5	5.9

Table IX-14

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 DLA ROAD 1966 NO LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
20-1	CHEV	4811	8364	1655	2602	4108	1320	1.32	12.49	.0261	.0453	.0090	.0130	.0234	.0238	.1446	2.150
20-2	CHEV	5194	8736	1815	2420	4501	1307	1.33	13.04	.0278	.0467	.0097	.0118	.0253	.0232	.1439	2.215
AVERAGE		5002	8550	1735	2511	4304	1313	1.33	12.77	.0270	.0460	.0094	.0124	.0244	.0235	.1443	2.183
CONF. LIM.		2569 TO 7435	6186 TO 10913	718 TO 2751	1354 TO 3667	1807 TO 6801	1230 TO 1396	1.26 TO 1.39	9.27 TO 16.26	.0161 TO .0378	.0371 TO .0549	.0049 TO .0138	.0048 TO .0200	.0123 TO .0364	.0197 TO .0273	.1398 TO .1487	1.770 TO 2.595
STD. DEV.		270	263	113	128	277	9	.01	.39	.0012	.0010	.0005	.0008	.0013	.0004	.0005	.046

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
20-1	CHEV	5175	8996	1780	2799	4418	1419	1.42	13.43	.0281	.0488	.0096	.0140	.0251	.0256	.1556	2.313
20-2	CHEV	5355	9008	1872	2495	4641	1348	1.37	13.44	.0286	.0482	.0100	.0121	.0260	.0239	.1484	2.284
AVERAGE		5265	9002	1826	2647	4529	1383	1.40	13.44	.0284	.0485	.0098	.0131	.0256	.0248	.1520	2.299
CONF. LIM.		4121 TO 6408	8926 TO 9077	1241 TO 2410	715 TO 4578	3112 TO 5946	932 TO 1834	1.08 TO 1.71	13.37 TO 13.50	.0252 TO .0315	.0447 TO .0523	.0073 TO .0123	.0010 TO .0251	.0198 TO .0313	.0139 TO .0356	.1063 TO .1977	2.114 TO 2.483
STD. DEV.		127	8	65	214	157	50	.04	.01	.0004	.0004	.0003	.0013	.0006	.0012	.0051	.020

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
20-1	CHEV	366 V-8	30000	3.05	14.04	13.18	13.61	13.96	70	3687	159.8	150.8	20.7	20.4
20-2	CHEV	366 V-8	30000	3.07	14.03	13.40	13.71	13.99	74	3710	157.8	148.8	20.4	9.6
AVERAGE				3.06	14.04	13.29	13.66	13.98	72	3698	158.8	149.8	20.5	15.0
CONF. LIM.				2.93 TO 3.19	13.97 TO 14.10	11.89 TO 14.69	13.02 TO 14.30	13.78 TO 14.17	46 TO 97	3552 TO 3844	146.1 TO 171.5	137.1 TO 162.5	18.5 TO 22.6	-53.6 TO 83.6
STD. DEV.				.01	.01	.16	.07	.02	2	16	1.4	1.4	.2	7.6

Table IX-15

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 DLA ROAD 1966 HALF LOAD

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
5-2	CHEV	3453	6190	2038	1605	2547	1639	1.50	12.82	.0239	.0429	.0141	.0103	.0185	.0377	.2103	2.824
5-4	CHEV	3540	6348	2037	1752	2559	1625	1.25	13.35	.0237	.0424	.0136	.0109	.0179	.0361	.1687	2.835
AVERAGE		3496	6269	2037	1678	2553	1632	1.38	13.09	.0238	.0427	.0139	.0106	.0182	.0369	.1895	2.830
CONF. LIM.		2943 TO 4049	5265 TO 7272	2031 TO 2043	744 TO 2612	2476 TO 2629	1543 TO 1720	-.21 TO 2.96	9.72 TO 16.45	.0225 TO .0251	.0395 TO .0458	.0107 TO .0170	.0068 TO .0144	.0144 TO .0220	.0267 TO .0471	-.0748 TO .4538	2.760 TO 2.899
STD. DEV.		61	111	0	103	8	9	.18	.37	.0001	.0004	.0004	.0004	.0004	.0011	.0294	.008

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
5-2	CHEV	3606	6464	2128	1676	2660	1711	1.57	13.39	.0250	.0448	.0147	.0107	.0193	.0394	.2196	2.949
5-4	CHEV	3573	6407	2056	1769	2583	1640	1.26	13.47	.0239	.0428	.0137	.0110	.0181	.0364	.1702	2.861
AVERAGE		3589	6435	2092	1722	2621	1675	1.42	13.43	.0245	.0438	.0142	.0109	.0187	.0379	.1949	2.905
CONF. LIM.		3379 TO 3799	6073 TO 6797	1634 TO 2549	1131 TO 2313	2132 TO 3110	1224 TO 2126	-.55 TO 3.38	12.92 TO 13.94	.0175 TO .0314	.0311 TO .0565	.0078 TO .0206	.0089 TO .0128	.0111 TO .0263	.0188 TO .0570	-.1189 TO .5087	2.346 TO 3.464
STD. DEV.		23	40	50	65	54	50	.22	.06	.0008	.0014	.0007	.0002	.0008	.0021	.0349	.062

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
5-2	CHEV	366 V-8	30000	2.26	13.90	13.28	13.59	13.85	64	4360	204.0	192.8	20.5	11.1
5-4	CHEV	366 V-8	30000	2.20	14.10	13.76	13.93	14.09	72	4383	197.6	186.0	21.4	2.6
AVERAGE				2.23	14.00	13.52	13.76	13.97	68	4371	200.8	189.4	20.9	6.9
CONF. LIM.				1.85 TO 2.61	12.73 TO 15.27	10.47 TO 16.57	11.60 TO 15.92	12.45 TO 15.49	17 TO 118	4225 TO 4517	160.1 TO 241.5	146.2 TO 232.6	15.3 TO 26.6	-47.2 TO 60.9
STD. DEV.				.04	.14	.34	.24	.17	5	16	4.5	4.8	.6	6.0

Table IX-16

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 DLA ROAD 1966 FULL LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
19-2	CHEV	4512	7700	1495	2291	3914	2193	1.66	12.31	.0349	.0596	.0116	.0163	.0318	.0563	.2593	3.025
19-3	CHEV	4462	7564	1655	2215	3694	2242	1.58	12.38	.0350	.0593	.0130	.0160	.0304	.0584	.2512	3.085
AVERAGE		4487	7632	1575	2253	3804	2217	1.62	12.35	.0350	.0595	.0123	.0162	.0311	.0574	.2553	3.055
CONF. LIM.		4169 TO 4804	6767 TO 8496	558 TO 2591	1770 TO 2735	2406 TO 5201	1906 TO 2528	1.11 TO 2.13	11.90 TO 12.79	.0343 TO .0356	.0575 TO .0614	.0034 TO .0212	.0142 TO .0181	.0222 TO .0400	.0440 TO .0707	.2038 TO .3067	2.674 TO 3.436
STD. DEV.		35	96	113	53	155	34	.06	.05	.0001	.0002	.0010	.0002	.0010	.0015	.0057	.042

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
19-2	CHEV	4881	8330	1617	2479	4234	2373	1.79	13.32	.0378	.0644	.0125	.0176	.0344	.0609	.2805	3.273
19-3	CHEV	4809	8153	1784	2388	3981	2416	1.71	13.35	.0377	.0640	.0140	.0172	.0328	.0629	.2708	3.325
AVERAGE		4845	8241	1700	2433	4107	2394	1.75	13.34	.0378	.0642	.0133	.0174	.0336	.0619	.2757	3.299
CONF. LIM.		4387 TO 5302	7116 TO 9366	639 TO 2761	1855 TO 3011	2500 TO 5714	2121 TO 2667	1.24 TO 2.26	13.14 TO 13.53	.0371 TO .0384	.0617 TO .0667	.0037 TO .0228	.0149 TO .0199	.0234 TO .0438	.0492 TO .0746	.2140 TO .3373	2.969 TO 3.629
STD. DEV.		50	125	118	64	178	30	.06	.02	.0001	.0003	.0011	.0003	.0011	.0014	.0069	.037

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
19-2	CHEV	366 V-8	30000	2.45	13.79	13.14	13.47	13.71	76	3640	226.9	215.1	20.1	18.2
19-3	CHEV	366 V-8	30000	2.40	13.84	13.16	13.50	13.76	79	3664	230.3	218.1	20.5	17.1
AVERAGE				2.43	13.82	13.15	13.49	13.74	77	3652	228.6	216.6	20.3	17.7
CONF. LIM.				2.11 TO 2.74	13.50 TO 14.13	13.02 TO 13.28	13.29 TO 13.68	13.42 TO 14.05	58 TO 96	3499 TO 3804	207.0 TO 250.2	197.5 TO 235.7	17.7 TO 22.9	10.7 TO 24.6
STD. DEV.				.04	.04	.01	.02	.04	2	16	2.4	2.1	.3	.8

Table IX-17

EFFECT OF VEHICLE LOAD ON SLAVE MODE DATA FROM THE ROAD

Group I Median Truck -- Dodge 1
Average of Replicate Runs

	Percent Load*		
	0	50	100
Percent Time in			
IDL	20.68	20.00	16.22
CRU	18.47	26.76	21.81
ACC	28.39	26.91	30.80
DEC	32.46	26.34	31.12
Pct. Cat. to Cat. Change			
IDL to ACC	7.69	8.22	7.50
CRU to ACC	2.54	3.92	3.39
CRU to DEC	5.14	11.74	7.94
ACC to CRU	3.15	7.64	4.78
ACC to DEC	37.98	27.60	33.92
DEC to IDL	7.70	8.22	7.10
DEC to CRU	4.72	8.01	6.96
DEC to ACC	30.70	23.49	27.80
Percent Time at			
FP	4.2	5.4	6.8
PT	46.4	51.1	49.0
DP	7.0	8.2	8.25
CT	42.4	35.8	36.0
Average Engine RPM	1034	1014	1040

*Percent of difference between GVW and empty weight of truck

Table IX-18

EFFECT OF VEHICLE LOAD ON SLAVE MODE DATA FROM THE ROAD

Group II Median Truck -- GMC 1
Average of Replicate Runs

	Percent Load*		
	0	50	100
Percent Time in			
IDL	16.72	19.75	16.82
CRU	19.80	20.19	17.95
ACC	29.40	29.72	31.66
DEC	34.09	30.34	33.56
Pct. Cat. to Cat. Change			
IDL to ACC	7.46	7.76	7.42
CRU to ACC	1.34	2.94	2.20
CRU to DEC	4.58	6.92	5.60
ACC to CRU	2.11	5.45	2.60
ACC to DEC	39.20	34.80	37.88
DEC to IDL	6.13	7.96	7.01
DEC to CRU	4.76	4.61	5.60
DEC to ACC	33.08	29.35	31.08
Percent Time at			
FP	8.6	9.5	11.00
PT	44.8	43.5	43.5
DP	7.8	8.7	6.2
CT	38.8	38.4	39.4
Average Engine RPM	1106	1120	1128

*Percent of difference between GVW and empty weight of truck

Table IX-19

EFFECT OF VEHICLE LOAD ON SLAVE MODE DATA FROM THE ROAD

Group III Median Truck -- Ford 3
Average of Replicate Runs

	Percent Load*		
	0	50	100
Percent Time in			
IDL	18.50	18.45	16.72
CRU	23.30	26.90	31.60
ACC	30.10	28.30	26.51
DEC	28.10	26.33	25.17
Pct. Cat. to Cat. Change			
IDL to ACC	7.60	8.78	6.97
CRU to ACC	3.36	5.10	4.14
CRU to DEC	9.02	8.98	13.86
ACC to CRU	6.50	5.80	7.19
ACC to DEC	32.02	29.93	26.13
DEC to IDL	7.60	8.60	7.24
DEC to CRU	5.65	8.07	10.82
DEC to ACC	27.80	22.72	22.24
Percent Time at			
FP	18.5	28.7	35.2
PT	40.4	30.3	26.8
DP	5.8	4.5	3.4
CT	35.3	36.4	34.7
Average Engine RPM	1330	1318	1403

*Percent of difference between GVW and empty weight of truck

Table IX-20

EFFECT OF VEHICLE LOAD ON SLAVE MODE DATA FROM THE ROAD

Group IV Median Truck -- Chevrolet 1
Average of Replicate Runs

	Percent Load*		
	0	50	100
Percent Time in			
IDL	16.35	13.24	12.34
CRU	32.02	46.19	38.34
ACC	25.72	20.68	25.92
DEC	25.92	19.89	23.40
Pct. Cat. to Cat. Change			
IDL to ACC	6.69	5.81	6.00
CRU to ACC	3.62	7.74	8.61
CRU to DEC	6.32	13.83	9.66
ACC to CRU	6.21	10.95	6.65
ACC to DEC	35.13	23.21	29.88
DEC to IDL	6.50	6.45	6.32
DEC to CRU	4.02	10.04	11.28
DEC to ACC	30.92	20.62	21.94
Percent Time at			
FP	6.2	7.0	25.4
PT	51.25	57.4	40.2
DP	4.9	7.0	6.6
CT	37.6	28.5	27.9
Average Engine RPM	1358	1463	1501

*Percent of difference between GVW and empty weight of truck

Table IX-21

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 1 ROAD DATA (WINTER)

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IP PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
1-1	FORD	2964	5509	1847	719	2044	1348	3.33	11.68	.0005	.0176	.0059	.0018	.0090	.0143	.2151	1.184
1-2	FORD	2834	5390	1894	1010	2487	1554	3.35	12.11	.0090	.0172	.0060	.0029	.0083	.0164	.2156	1.225
3-1	CHEV	3852	6925	2251	1400	3265	1334	2.25	12.55	.0073	.0132	.0043	.0024	.0065	.0084	.0869	.760
3-2	CHEV	4380	7500	2493	1392	3685	1513	1.92	12.52	.0087	.0140	.0049	.0023	.0077	.0100	.0770	.790
4-1	CHEV	5037	8273	3136	1871	4265	930	1.68	12.32	.0101	.0187	.0063	.0034	.0090	.0062	.1498	.788
4-3	CHEV	5419	8758	3262	2037	4459	967	1.89	12.77	.0105	.0190	.0063	.0035	.0091	.0062	.1530	.789
7-1	IHC	4752	6988	857	1910	4214	1606	3.75	13.62	.0096	.0127	.0016	.0031	.0080	.0097	.1377	.786
7-2	IHC	4679	8914	2819	2112	3083	1628	1.97	14.41	.0088	.0187	.0059	.0040	.0088	.0113	.1685	.960
8-4	CHEV	4731	8916	2845	2111	3961	385	4.57	12.07	.0094	.0177	.0056	.0038	.0082	.0025	.1830	.760
8-5	CHEV	4373	8731	2805	1851	3985	441	4.63	11.85	.0105	.0209	.0072	.0040	.0097	.0035	.2237	.900
8-2	DODGE	4733	8530	3416	1940	4184	1152	4.70	12.64	.0110	.0222	.0079	.0040	.0102	.0089	.2208	.933
8-3	DODGE	4354	8912	3169	1891	3913	1284	3.88	11.82	.0105	.0214	.0076	.0039	.0099	.0102	.1882	.901
10-1	FORD	5982	11178	3127	3530	4521	1750	3.23	14.90	.0091	.0171	.0048	.0051	.0072	.0089	.0998	.723
10-3	FORD	5637	9977	3087	2532	4358	2057	2.70	13.33	.0100	.0178	.0055	.0041	.0081	.0122	.0972	.753
25-1	CHEV	4372	9051	1435	3046	4560	1779	2.31	12.81	.0130	.0269	.0043	.0084	.0142	.0175	.1386	1.208
25-2	CHEV	3990	8073	1319	2455	4300	1524	2.02	12.44	.0087	.0196	.0032	.0054	.0100	.0123	.0992	.958
29-1	FORD	4858	10664	3531	2740	4393	2064	3.94	12.87	.0153	.0335	.0111	.0070	.0145	.0216	.2506	1.285
29-2	FORD	4992	10478	3674	2655	4248	1381	3.53	12.93	.0167	.0351	.0120	.0042	.0140	.0154	.2395	1.378
41-1	GMC	6233	11705	1557	3321	6627	1288	3.75	13.02	.0158	.0296	.0039	.0076	.0181	.0108	.1915	1.046
41-2	GMC	6008	11153	1409	3202	6372	1113	3.67	13.13	.0133	.0248	.0033	.0066	.0148	.0082	.1647	.925
AVERAGE		4709	8931	2504	2185	4241	1354	3.45	12.70	.0109	.0209	.0059	.0046	.0104	.0107	.1650	.953
CONF. LIM.		4296 TO 5121	8098 TO 9764	2107 TO 2901	1827 TO 2543	3787 TO 4695	1146 TO 1563	3.06 TO 3.84	12.41 TO 13.17	.0087 TO .0131	.0180 TO .0238	.0047 TO .0070	.0037 TO .0056	.0089 TO .0119	.0085 TO .0129	.1399 TO .1902	.858 TO 1.047
STD. DEV.		902	1780	848	764	970	446	.83	.82	.0026	.0062	.0025	.0021	.0032	.0047	.0538	.202

IX-24

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 303-6

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCMTD	COMTD
1	534	4.2	10.3	1.16	619	4.87	22	.18
2	285	.18	13.1	1.11	316	.2	28	.02
3	153	.12	12.7	1.16	177	.14	45	.04
4	133	.22	13.4	1.1	146	.24	13	.02
5	99	.17	13.1	1.13	112	.19	5	.01
6	98	.17	13.2	1.12	114	.19	10	.02
7	133	3.5	11.5	1.12	149	3.92	46	1.11
8	95	.23	12.3	1.11	107	.26	10	.02
9	8127	3.56	4.2	1.06	8615	3.77	131	.03

TOTALS: HCMTD = 356 COMTD 1.5

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCMTD	COMTD
1	534	4.2	10.3	1.16	619	4.87	22	.18
2	87	.17	12.9	1.15	101	.2	9	.02
3	86	.12	12.6	1.18	101	.14	26	.04
4	83	.22	13.2	1.12	94	.25	8	.02
5	54	.2	13.4	1.11	60	.22	3	.01
6	71	.17	13.1	1.13	79	.19	7	.02
7	103	2.85	12.2	1.09	113	3.11	33	.88
8	79	.23	13.4	1.1	87	.25	8	.02
9	7631	2.93	4.4	1.11	8470	3.25	178	.07

TOTALS: HCMTD = 297 COMTD 1.26
AVERAGE COLD CYCLE CONCENTRATION HC= 325 CO= 1.33

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCMTD	COMTD
1	323	4.24	10.7	1.14	368	4.83	13	.17
2	79	.17	13.1	1.13	89	.19	8	.02
3	79	.13	12.7	1.17	92	.15	24	.04
4	75	.19	13.4	1.11	83	.21	7	.02
5	49	.17	13.4	1.11	54	.19	3	.01
6	61	.17	13.2	1.12	68	.19	6	.02
7	103	2.61	12.5	1.08	111	2.82	31	.8
8	78	.22	13.5	1.1	86	.24	8	.02
9	7554	3.41	4.6	1.08	8158	3.68	171	.08

TOTALS: HCMTD = 271 COMTD 1.18

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCMTD	COMTD
1	323	4.24	10.7	1.14	368	4.83	13	.17
2	76	.17	13.2	1.12	85	.19	8	.02
3	73	.12	12.6	1.18	86	.14	22	.04
4	70	.19	13.4	1.11	78	.21	7	.02
5	44	.2	13.3	1.12	49	.22	2	.01
6	62	.17	13.2	1.12	69	.19	6	.02
7	98	2.67	12.3	1.09	107	2.91	31	.82
8	76	.23	13.6	1.09	83	.25	7	.02
9	7221	3.37	4.7	1.1	7943	3.71	167	.08

TOTALS: HCMTD = 262 COMTD 1.2
AVERAGE HOT CYCLE CONCENTRATION HC= 266.5 CO= 1.19

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 286.975 PPM
CARBON MONOXIDE 1.2565 PERCENT

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Table IX-22

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 1 ROAD DATA (WINTER)

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
1-1	FORD	3140	5836	1957	761	3119	1428	3.53	12.38	.0100	.0186	.0062	.0019	.0104	.0151	.2279	1.255
1-2	FORD	2911	5537	1935	1047	2555	1597	3.44	12.44	.0093	.0176	.0062	.0029	.0085	.0169	.2215	1.258
3-1	CHEV	4024	7236	2352	1472	3412	1394	2.36	13.11	.0077	.0138	.0045	.0025	.006A	.0088	.0908	.794
3-2	CHEV	4631	7930	2625	1408	3896	1600	2.03	13.24	.0092	.0157	.0052	.0024	.0081	.0105	.0814	.835
4-1	CHEV	5037	9273	3136	1871	4265	930	3.68	12.32	.0101	.0187	.0063	.0034	.0090	.0062	.1498	.788
4-3	CHEV	5419	9758	3262	2037	4459	967	3.89	12.77	.0105	.0190	.0063	.0035	.0091	.0062	.1530	.789
7-1	IHC	4752	6986	857	1918	4214	1606	3.75	13.62	.0086	.0127	.0016	.0031	.0080	.0097	.1377	.786
7-2	IHC	4679	8914	2819	2112	3983	1628	3.97	14.41	.0088	.0187	.0059	.0040	.0088	.0113	.1685	.960
8-4	CHEV	4731	8916	2845	2111	3961	385	4.57	12.07	.0094	.0177	.0056	.003A	.0082	.0025	.1830	.760
8-5	CHEV	4373	8731	2995	1851	3885	441	4.63	11.85	.0105	.020A	.0072	.0040	.0097	.0035	.2237	.900
9-2	DODGE	4733	9530	3416	1940	4184	1152	4.70	12.64	.0110	.0222	.0079	.0040	.0102	.0089	.220A	.933
9-3	DODGE	4456	9121	3243	1874	4004	1314	3.97	12.10	.0107	.0219	.0078	.0040	.0101	.0105	.1926	.923
10-1	FORD	5982	11178	3127	3530	4521	1750	3.23	14.90	.0091	.0171	.0048	.0051	.0072	.0089	.0998	.723
10-3	FORD	5637	9977	3087	2532	4358	2057	2.70	13.33	.0100	.0178	.0055	.0041	.0081	.0122	.0972	.753
25-1	CHEV	4473	9261	1468	3117	4676	1820	2.36	13.11	.0133	.0275	.0044	.0086	.0146	.0179	.1418	1.236
25-2	CHEV	4233	8566	1309	2605	4562	1617	2.15	13.20	.0103	.0208	.0034	.005A	.0116	.0130	.1052	1.017
29-1	FORD	4858	10664	3531	2740	4393	2064	3.94	12.87	.0153	.0335	.0111	.0079	.0145	.0216	.2506	1.285
29-2	FORD	4902	10478	3574	2655	4248	1381	3.53	12.93	.0167	.0351	.0120	.0082	.0140	.0154	.2395	1.378
41-1	GMC	6233	11705	1557	3321	6827	1288	3.75	13.02	.0158	.0296	.0039	.0076	.0181	.0108	.1915	1.046
41-2	GMC	6008	11153	1409	3292	6372	1113	3.67	13.13	.0133	.024A	.0033	.0066	.014A	.0082	.1647	.925
AVERAGE		4765	9038	2534	2209	4294	1376	3.49	12.97	.0110	.0212	.0060	.0047	.0105	.0109	.1671	.967
CONF. LIM.		4366 TO 5163	8247 TO 9828	2142 TO 2925	1854 TO 2563	3853 TO 4735	1164 TO 1588	3.12 TO 3.87	12.62 TO 13.32	.0099 TO .0122	.0183 TO .0240	.0048 TO .0071	.0037 TO .0056	.0091 TO .0120	.0087 TO .0131	.1419 TO .1922	.870 TO 1.064
STD. DEV.		851	1688	836	757	942	453	.80	.75	.0025	.0061	.0025	.0021	.0032	.0048	.0537	.208

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Table IX-23

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 1 ROAD DATA (WINTER)

RUN NO.	MAKE	ENGINE TYPE	GVW LB	C2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
1-1	FORD	240 L-6	6000	1.95	13.07	12.55	12.81	12.99	60	1124	92.2	88.7	18.7	14.5
1-2	FORD	240 L-6	6000	1.17	13.06	12.82	12.94	13.02	67	1154	92.1	88.6	19.1	7.2
3-1	CHEV	250 I-6	5000	1.62	13.50	13.19	13.35	13.46	90	11530	55.7	53.0	17.1	14.4
3-2	CHEV	250 I-6	5000	1.88	13.65	13.19	13.42	13.59	91	11553	58.1	55.2	18.5	17.2
4-1	CHEV	230 I-6	4500	1.21	12.93	12.95	12.94	12.93	85	27005	58.1	56.0	17.4	-.8
4-3	CHEV	230 I-6	4500	1.53	12.84	13.23	13.04	12.91	90	27063	56.1	54.1	18.3	-17.2
7-1	IHC	152 I-4	3900	3.25	12.90	13.76	13.33	13.03	88	1220	52.5	50.5	19.3	-40.5
7-2	IHC	152 I-4	3900	3.14	12.81	14.25	13.53	13.03	78	1243	60.7	58.4	18.7	-72.1
8-4	CHEV	283 V-8	5000	1.27	12.57	12.79	12.68	12.62	98	22870	56.8	55.1	18.9	-8.3
8-5	CHEV	283 V-8	5000	1.24	12.55	12.66	12.60	12.57	58	22892	68.4	66.5	19.2	-3.0
9-2	DODGE	225 I-6	5200	1.22	12.52	13.15	12.84	12.64	55	1965	66.6	64.6	18.6	-27.2
9-3	DODGE	225 I-6	5200	1.11	12.85	12.64	12.74	12.81	52	1987	69.1	66.7	19.5	6.0
10-1	FORD	170 I-6	4930	2.56	13.11	14.56	13.84	13.28	86	23966	44.4	42.5	18.6	-136.1
10-3	FORD	170 I-6	4930	2.20	13.32	13.58	13.45	13.35	85	24012	51.8	49.5	17.5	-11.0
25-1	CHEV	250 I-6	5000	2.93	13.48	13.28	13.38	13.45	60	9943	86.6	82.5	18.2	6.0
25-2	CHEV	250 I-6	5000	2.83	13.60	13.17	13.38	13.54	53	9967	70.9	67.5	18.5	14.5
29-1	FORD	352 V-8	5000	2.53	12.82	13.29	13.06	12.90	52	10953	90.7	87.5	16.2	-16.0
29-2	FORD	352 V-8	5000	2.31	12.99	13.33	13.16	13.04	59	10977	97.0	93.3	17.4	-10.7
41-1	GMC	305 V-6	5200	1.90	12.99	13.39	13.15	12.98	92	14729	73.1	70.3	17.8	-17.4
41-2	GMC	305 V-6	5200	1.61	12.93	13.45	13.19	13.01	83	14752	64.2	61.7	17.5	-17.7
AVERAGE				1.96	13.02	13.26	13.14	13.06	74	12545	68.3	65.6	18.2	-14.9
CONF. LIM.				1.64 TO 2.29	12.86 TO 13.18	13.02 TO 13.50	12.99 TO 13.29	12.92 TO 13.20	66 TO 81	8163 TO 16926	60.9 TO 75.6	58.6 TO 72.7	17.8 TO 18.6	-31.6 TO 1.8
STD. DEV.				.70	.34	.51	.32	.30	16	9361	15.6	15.1	.9	35.7

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Table IX-24

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 ROAD DATA (WINTER)

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
2-1	FORD	4100	7280	2858	1162	3270	1596	2.95	12.01	.0168	.0298	.0117	.0041	.0141	.0218	.2452	1.567
2-3	FORD	3901	6918	2353	1695	2870	1811	3.07	11.87	.0153	.0272	.0092	.0061	.0118	.0236	.2436	1.482
6-1	GMC	4670	8925	2633	2420	3872	1387	3.50	12.29	.0149	.0285	.0084	.0071	.0130	.0147	.2258	1.247
6-2	GMC	5082	9458	2222	2602	4634	1203	3.36	12.14	.0178	.0331	.0078	.0083	.0170	.0140	.2382	1.351
13-1	FORD	5680	10360	2406	2953	5010	1474	3.66	11.27	.0190	.0347	.0081	.0091	.0176	.0164	.2479	1.199
13-2	FORD	6535	11690	2642	2960	6087	1451	4.03	11.75	.0222	.0397	.0089	.0091	.0216	.0163	.2761	1.265
16-1	CHEV	5385	9736	2602	3130	3095	1773	2.52	12.89	.0141	.0255	.0068	.0077	.0110	.0154	.1331	1.071
16-2	CHEV	6041	10344	2476	3120	4747	1428	2.96	12.14	.0171	.0293	.0070	.0082	.0141	.0134	.1699	1.093
27-1	CHEV	6571	11801	1396	3568	6837	1164	3.89	11.23	.0197	.0354	.0042	.0097	.0215	.0116	.2359	1.070
27-2	CHEV	6506	11737	1987	3047	6704	1358	3.71	11.41	.0198	.0357	.0060	.0083	.0214	.0137	.2281	1.101
38-1	DODGE	7658	13470	1892	3408	7179	1382	3.75	12.51	.0239	.0380	.0059	.0095	.0235	.0143	.2367	1.240
38-2	DODGE	6222	11116	1833	2569	6714	1340	3.47	12.35	.0194	.0346	.0057	.0070	.0210	.0139	.2183	1.222
39-2	FORD	5422	9949	1638	2244	6067	1422	3.70	12.79	.0196	.0360	.0059	.0070	.0230	.0171	.1972	1.468
39-3	FORD	6099	10583	1637	2332	6563	1371	3.97	12.72	.0220	.0381	.0061	.0073	.0249	.0164	.2162	1.456
40-2	CHEV	8496	12970	2163	2988	7928	1255	4.43	11.28	.0278	.0424	.0071	.0085	.0268	.0136	.2930	1.170
40-3	CHEV	8143	12964	1681	3480	7794	1118	4.40	11.47	.0277	.0441	.0057	.0106	.0278	.0126	.3030	1.239
43-1	IHC	8617	13446	1754	3807	7795	1162	2.85	13.21	.0257	.0401	.0052	.0105	.0244	.0115	.1720	1.252
43-2	IHC	9230	14505	1903	3788	8814	982	2.69	12.63	.0288	.0453	.0059	.0105	.0288	.0102	.1697	1.251
46-1	CHEV	8057	13154	1304	3589	8262	1113	4.01	11.92	.0244	.0398	.0039	.0096	.0262	.0112	.2453	1.145
46-2	CHEV	8414	14128	656	4332	9139	1012	3.98	11.98	.0266	.0447	.0021	.0123	.0304	.0106	.2550	1.205
AVERAGE		6541	11178	2004	2965	6209	1340	3.45	12.09	.0211	.0362	.0066	.0085	.0210	.0146	.2275	1.255
CONF. LIM.		5802 TO 7280	10191 TO 12166	1750 TO 2258	2608 TO 3322	5340 TO 7077	1235 TO 1444	3.17 TO 3.72	11.82 TO 12.37	.0190 TO .0233	.0334 TO .0389	.0056 TO .0076	.0077 TO .0094	.0183 TO .0238	.0130 TO .0162	.2076 TO .2474	1.188 TO 1.322
STD. DEV.		1579	2100	542	763	1855	223	.58	.58	.0046	.0059	.0021	.0019	.0059	.0034	.0426	.143

Table IX-25

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 ROAD DATA (WINTER)

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
2-1	FORD	4319	7670	3011	1224	3445	1681	3.11	12.65	.0177	.0315	.0124	.0043	.0148	.0229	.2584	1.651
2-3	FORD	4127	7321	2499	1794	3037	1916	3.24	12.56	.0162	.0288	.0098	.0065	.0125	.0250	.2577	1.568
6-1	GMC	4706	8994	2653	2439	3903	1398	3.52	12.39	.0150	.0287	.0085	.0072	.0131	.0148	.2276	1.257
6-2	GMC	5207	9691	2277	2666	4749	1233	3.45	12.43	.0182	.0340	.0080	.0085	.0175	.0143	.2441	1.384
13-1	FORD	6106	11148	2587	3175	5386	1584	3.94	12.12	.0204	.0373	.0087	.0098	.0180	.0176	.2666	1.289
13-2	FORD	6679	11956	2700	3034	6221	1483	4.12	12.01	.0226	.0405	.0091	.0093	.0221	.0167	.2821	1.293
16-1	CHEV	5438	9831	2628	3170	4034	1791	2.54	13.01	.0142	.0257	.0069	.0078	.0111	.0156	.1344	1.081
16-2	CHEV	6301	10789	2583	3255	4952	1489	3.09	12.66	.0179	.0306	.0073	.0085	.0147	.0140	.1772	1.140
27-1	CHEV	7015	12598	1401	3808	7298	1242	4.15	11.98	.0211	.0378	.0045	.0104	.0230	.0124	.2519	1.143
27-2	CHEV	6907	12462	2110	3235	7117	1442	3.94	12.12	.0210	.0379	.0064	.0088	.0227	.0145	.2422	1.169
38-1	DODGE	7658	12479	1802	3408	7179	1382	3.75	12.51	.0239	.0389	.0059	.0095	.0235	.0143	.2367	1.240
38-2	DODGE	6252	11160	1841	2582	6746	1347	3.48	12.41	.0195	.0348	.0057	.0070	.0220	.0139	.2194	1.228
39-2	FORD	5470	10036	1652	2264	6120	1434	2.72	12.90	.0198	.0363	.0060	.0071	.0232	.0172	.1989	1.481
39-3	FORD	6108	10598	1689	2336	6573	1373	2.97	12.74	.0220	.0382	.0061	.0073	.0249	.0164	.2165	1.458
40-2	CHEV	8813	13463	2244	3099	8120	1301	4.60	11.70	.0288	.0440	.0073	.0088	.0278	.0141	.3039	1.214
40-3	CHEV	8346	13287	1723	3576	7988	1146	4.51	11.75	.0284	.0452	.0059	.0108	.0285	.0129	.3106	1.270
43-1	IHC	8617	13446	1754	3837	7795	1162	2.85	13.21	.0257	.0401	.0052	.0105	.0244	.0115	.1720	1.252
43-2	IHC	9417	14790	1941	3865	8093	1002	2.74	12.88	.0298	.0462	.0061	.0107	.0294	.0104	.1731	1.277
46-1	CHEV	8139	13288	1317	3625	8346	1125	4.05	12.05	.0246	.0402	.0040	.0097	.0265	.0113	.2478	1.157
46-2	CHEV	8476	14231	661	4363	9206	1019	4.01	12.07	.0268	.0451	.0021	.0124	.0306	.0107	.2569	1.214
AVERAGE		6705	11463	2062	3040	6360	1377	3.54	12.41	.0217	.0371	.0068	.0087	.0216	.0150	.2339	1.288
CONF. LIM.		5967 TO 7442	10480 TO 12445	1793 TO 2330	2679 TO 3401	5490 TO 7230	1264 TO 1490	3.25 TO 3.83	12.21 TO 12.61	.0195 TO .0238	.0343 TO .0399	.0057 TO .0078	.0079 TO .0096	.0188 TO .0243	.0133 TO .0168	.2127 TO .2551	1.219 TO 1.358
STD. DEV.		1575	2090	573	771	1859	241	.62	.42	.0046	.0059	.0023	.0019	.0059	.0037	.0453	.149

Table IX-26

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 ROAD DATA (WINTER)

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	SCF/MILE.. AIR	SCF/MILE.. EXH	MPH	PCT AIR
2-1	FORD	352 V-8	10000	1.68	13.22	12.75	12.99	13.16	60	30171	119.1	114.2	19.3	11.6
2-3	FORD	352 V-8	10000	1.35	13.17	12.67	12.92	13.10	74	30231	113.8	109.3	19.6	12.5
6-1	GMC	305 V-6	7500	1.45	13.00	12.93	12.97	12.99	92	40269	92.3	88.9	19.1	2.1
6-2	GMC	305 V-6	7500	1.39	13.05	12.83	12.94	13.02	88	40293	101.3	97.4	19.7	5.0
13-1	FORD	240 I-6	7500	1.43	12.94	12.30	12.62	12.83	43	2279	96.4	93.1	19.5	17.7
13-2	FORD	240 I-6	7500	1.61	12.70	12.59	12.69	12.75	50	2301	97.4	94.3	18.3	5.8
16-1	CHEV	250 I-6	7500	1.84	13.30	13.31	13.35	13.38	75	9342	76.2	72.8	20.8	2.9
16-2	CHEV	250 I-6	7500	1.65	13.21	12.84	13.03	13.16	80	9364	82.2	78.8	20.1	10.9
27-1	CHEV	292 I-6	7500	2.66	12.84	12.27	12.56	12.74	82	7935	86.2	83.5	20.2	15.6
27-2	CHEV	292 I-6	7500	1.71	12.91	12.38	12.65	12.82	82	7957	87.5	84.5	19.4	14.3
38-1	DODGE	318 V-8	7500	2.56	12.90	13.07	12.98	12.93	43	5821	90.0	86.8	17.3	-5.0
38-2	DODGE	318 V-8	7500	2.04	13.01	12.97	12.99	13.01	43	5845	90.0	86.6	18.6	1.5
39-2	FORD	300 I-6	7500	1.75	13.32	13.24	13.28	13.31	49	4252	105.2	100.5	17.5	2.3
39-3	FORD	300 I-6	7500	1.65	13.21	13.20	13.21	13.21	45	1276	104.7	100.2	17.6	.4
40-2	CHEV	250 I-6	10000	1.95	12.63	12.30	12.46	12.56	70	19338	93.5	90.9	19.0	9.2
40-3	CHEV	250 I-6	10000	1.77	12.64	12.42	12.53	12.59	74	19361	97.4	94.6	17.6	6.1
43-1	IHC	266 V-8	6100	2.34	13.26	13.51	13.38	13.29	73	21779	86.7	82.9	18.7	-8.6
43-2	IHC	266 V-8	6100	2.24	13.32	13.14	13.23	13.30	70	21801	90.8	86.8	18.4	5.4
46-1	CHEV	283 V-8	7500	2.11	12.70	12.70	12.75	12.78	54	17465	86.0	84.1	19.7	2.0
46-2	CHEV	283 V-8	7500	2.06	12.81	12.74	12.77	12.79	54	17491	91.1	88.0	18.0	2.1
AVERAGE				1.87	13.02	12.81	12.92	12.99	65	15578	94.4	90.9	19.0	5.7
CONF. LIM.				1.70 TO 2.04	12.91 TO 13.13	12.64 TO 12.98	12.78 TO 13.05	12.87 TO 13.10	57 TO 72	9788 TO 21368	89.6 TO 99.3	86.3 TO 95.6	18.5 TO 19.4	2.6 TO 8.9
STD. DEV.				.37	.23	.37	.28	.25	16	12371	10.4	9.9	1.0	6.8

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Table IX-27

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 ROAD DATA (WINTER)

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
18-2	FORD	6655	10167	2147	3436	4584	2263	2.19	12.15	.0356	.0544	.0115	.0172	.0257	.0402	.2374	2.066
18-3	FORD	6457	10117	2058	3367	4693	2401	2.09	12.42	.0354	.0554	.0113	.0172	.0270	.0437	.2321	2.162
33-1	FORD	6674	10936	2279	3210	5450	2066	2.05	12.66	.0464	.0761	.0158	.0205	.0398	.0477	.2881	2.795
33-2	FORD	7042	11834	2627	3350	5857	1821	2.33	12.19	.0468	.0786	.0174	.0204	.0408	.0402	.3125	2.573
34-2	FORD	13631	20974	4675	5844	10455	1520	2.47	11.97	.0788	.1212	.0270	.0308	.0634	.0292	.2883	2.197
34-3	FORD	13258	21365	4511	5843	11012	1545	2.44	11.95	.0768	.1237	.0261	.0307	.0669	.0297	.2854	2.197
35-2	CHEV	5292	10564	2474	3975	4115	1955	3.04	12.86	.0224	.0448	.0105	.0160	.0183	.0275	.2609	1.731
35-3	CHEV	5711	11543	3174	4005	4343	1597	3.53	12.52	.0242	.0489	.0135	.0161	.0193	.0225	.3018	1.683
37-2	GMC	3873	7595	1593	2486	3515	2530	1.88	13.09	.0208	.0407	.0085	.0124	.0198	.0450	.2039	2.230
37-4	GMC	4207	7768	2008	2139	3623	2424	1.75	12.80	.0231	.0426	.0110	.0108	.0208	.0441	.1945	2.229
42-1	FORD	3803	8168	1293	3077	3808	1060	4.54	11.92	.0150	.0314	.0049	.0111	.0154	.0135	.3527	1.456
42-2	FORD	4041	8578	1679	2835	4064	1017	4.93	11.96	.0169	.0359	.0070	.0110	.0178	.0141	.4171	1.588
44-1	CHEV	6242	10074	935	3140	5049	1432	3.41	11.87	.0311	.0502	.0049	.0142	.0311	.0237	.3435	1.879
44-2	CHEV	6135	9884	1112	3021	5751	1637	3.14	12.11	.0311	.0502	.0056	.0139	.0306	.0276	.3222	1.952
45-1	CHEV	5444	9867	1139	3636	5101	1401	4.04	12.14	.0241	.0437	.0050	.0150	.0237	.0206	.3617	1.710
45-2	CHEV	5305	9368	1047	3155	5166	1298	3.83	12.14	.0227	.0400	.0045	.0124	.0232	.0184	.3306	1.648
47-1	CHEV	5433	9234	983	2767	5485	1187	4.82	12.20	.0217	.0369	.0039	.0100	.0230	.0157	.3896	1.549
47-2	CHEV	5743	9743	975	2825	5943	1283	5.01	12.83	.0227	.0384	.0038	.0100	.0246	.0168	.3997	1.609
50-1	IHC	4170	8032	1082	2171	4779	1456	2.45	13.01	.0192	.0370	.0050	.0089	.0231	.0223	.2283	1.905
50-2	IHC	4255	8273	1141	2316	4816	1540	2.44	13.06	.0201	.0391	.0054	.0098	.0230	.0242	.2330	1.959
AVERAGE		6172	10704	1949	3329	5425	1671	3.12	12.39	.0317	.0545	.0101	.0154	.0289	.0283	.2992	1.956
CONF. LIM.		4916 TO 7428	8937 TO 12470	1428 TO 2469	2859 TO 3800	4503 TO 6347	1456 TO 1886	2.61 TO 3.63	12.20 TO 12.59	.0233 TO .0402	.0422 TO .0667	.0069 TO .0134	.0125 TO .0183	.0223 TO .0355	.0231 TO .0336	.2684 TO .3300	1.791 TO 2.121
STD. DEV.		2692	3774	1111	1094	1970	459	1.08	.42	.0180	.0263	.0069	.0063	.0140	.0113	.0658	.353

Table IX-28

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 ROAD DATA (WINTER)

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
18-2	FORD	7179	10962	2316	3706	4945	2441	2.37	13.11	.0384	.0587	.0124	.0186	.0278	.0434	.2561	2.229
18-3	FORD	6847	10727	2192	3570	4976	2545	2.22	13.17	.0375	.0588	.0119	.0182	.0286	.0463	.2461	2.293
33-1	FORD	6962	11411	2378	3348	5685	2155	2.14	13.20	.0484	.0794	.0165	.0214	.0415	.0498	.3005	2.916
33-2	FORD	7534	12662	2811	3585	6266	1948	2.49	13.04	.0501	.0841	.0187	.0218	.0437	.0430	.3344	2.753
34-2	FORD	14733	22670	5053	6317	11300	1643	2.67	12.93	.0852	.1310	.0292	.0333	.0685	.0315	.3116	2.374
34-3	FORD	14369	23156	4899	6332	11935	1675	2.64	12.95	.0832	.1341	.0283	.0333	.0725	.0322	.3093	2.381
35-2	CHEV	5292	10564	2474	3975	4115	1955	3.04	12.86	.0224	.0448	.0105	.0160	.0183	.0275	.2609	1.731
35-3	CHEV	5711	11543	3104	4005	4343	1597	3.53	12.52	.0242	.0489	.0135	.0161	.0193	.0225	.3018	1.683
37-2	GMC	3929	7704	1616	2522	3566	2567	1.91	13.28	.0211	.0413	.0087	.0126	.0201	.0457	.2069	2.262
37-4	GMC	4375	8077	2098	2223	3767	2520	1.82	13.31	.0240	.0443	.0114	.0112	.0217	.0459	.2022	2.318
42-1	FORD	3803	8169	1283	3077	3308	1060	4.54	11.92	.0150	.0314	.0049	.0111	.0154	.0135	.3527	1.456
42-2	FORD	4041	8578	1679	2835	4064	1017	4.93	11.96	.0169	.0359	.0070	.0110	.0178	.0141	.4171	1.588
44-1	CHEV	6502	10493	1026	3271	6197	1491	3.55	12.37	.0324	.0523	.0051	.0148	.0324	.0247	.3578	1.957
44-2	CHEV	6361	10248	1153	3132	5963	1697	3.26	12.56	.0323	.0520	.0058	.0144	.0317	.0286	.3341	2.024
45-1	CHEV	5444	9867	1139	3636	5101	1401	4.04	12.14	.0241	.0437	.0050	.0150	.0237	.0206	.3617	1.710
45-2	CHEV	5323	9400	1051	3166	5184	1302	3.84	12.18	.0227	.0402	.0045	.0124	.0232	.0185	.3317	1.654
47-1	CHEV	5433	9234	993	2767	5485	1187	4.82	12.20	.0217	.0369	.0039	.0100	.0230	.0157	.3896	1.549
47-2	CHEV	5743	9743	975	2825	5943	1283	5.01	12.83	.0227	.0384	.0038	.0100	.0246	.0168	.3997	1.609
50-1	IHC	4187	8066	1097	2100	4799	1462	2.46	13.06	.0193	.0372	.0050	.0090	.0232	.0224	.2292	1.913
50-2	IHC	4258	8278	1142	2317	4819	1541	2.44	13.07	.0201	.0391	.0054	.0098	.0230	.0242	.2332	1.960
AVERAGE		6405	11077	2025	3430	5613	1724	3.19	12.73	.0331	.0566	.0106	.0160	.0300	.0293	.3068	2.018
COEF. LIM.		4996 TO 7813	8080 TO 13075	1457 TO 2593	2912 TO 3966	4577 TO 6648	1491 TO 1957	2.70 TO 3.67	12.52 TO 12.95	.0237 TO .0424	.0429 TO .0704	.0070 TO .0141	.0127 TO .0193	.0227 TO .0374	.0237 TO .0350	.2768 TO .3369	1.826 TO 2.210
STD. DEV.		3009	4267	1213	1126	2212	497	1.04	.46	.0200	.0293	.0076	.0070	.0156	.0122	.0642	.411

Table IX-29

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 ROAD DATA (WINTER)

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	SCF/MILE.. AIR	SCF/MILE.. EXH	MPH	PCT AIR
18-2	FORD	330 V-8	20000	2.37	13.52	13.12	13.32	13.45	80	18184	156.2	148.8	20.1	16.3
18-3	FORD	330 V-8	20000	2.56	13.56	13.16	13.36	13.51	73	18208	160.1	152.4	19.7	12.9
33-1	FORD	330 V-8	20000	2.41	13.58	13.22	13.40	13.55	39	2188	203.3	193.4	19.8	10.7
33-2	FORD	330 V-8	20000	2.48	13.47	13.12	13.30	13.40	39	2210	193.7	184.8	18.3	17.8
34-2	FORD	330 V-8	20000	2.78	13.41	12.73	13.07	13.33	41	32266	168.2	160.7	19.8	20.0
34-3	FORD	330 V-8	20000	2.90	13.42	12.72	13.07	13.34	48	32289	168.6	161.0	19.1	20.3
35-2	CHEV	292 I-6	19500	1.96	13.19	13.28	13.23	13.20	49	4231	123.0	117.9	19.9	-4.1
35-3	CHEV	292 I-6	19500	1.34	12.79	13.07	13.03	13.00	52	4253	122.4	117.7	19.0	-3.2
37-2	GMC	305 V-6	19500	2.69	13.66	13.44	13.55	13.65	37	35824	157.1	149.1	19.6	5.0
37-4	GMC	305 V-6	19500	2.36	13.73	13.27	13.50	13.69	30	35867	160.8	152.5	20.1	11.5
42-1	FORD	240 I-6	18000	1.59	12.59	12.70	12.64	12.61	80	15163	110.1	107.0	20.6	-4.2
42-2	FORD	240 I-6	18000	1.09	12.43	12.72	12.57	12.49	77	15185	119.4	116.3	20.4	-11.6
44-1	CHEV	292 I-6	19500	2.09	13.04	12.67	12.85	12.98	34	26538	143.9	138.6	20.0	11.8
44-2	CHEV	292 I-6	19500	1.39	13.14	12.82	12.98	13.10	40	25560	147.0	141.1	19.7	10.6
45-1	CHEV	292 I-6	19500	1.87	12.79	12.84	12.81	12.79	43	35837	127.5	123.3	20.0	-2.0
45-2	CHEV	292 I-6	19500	1.95	12.87	12.84	12.85	12.86	41	35859	123.1	118.8	19.9	1.2
47-1	CHEV	250 I-6	16000	1.62	12.47	12.88	12.67	12.55	38	1702	114.3	111.1	20.7	-18.6
47-2	CHEV	250 I-6	16000	1.58	12.40	13.27	12.83	12.57	40	1816	112.9	109.7	20.6	-50.7
50-1	IHC	304 V-8	18200	1.42	13.42	13.38	13.40	13.42	75	10764	134.4	128.2	18.3	1.4
50-2	IHC	304 V-8	18200	1.42	13.42	13.42	13.42	13.42	70	10786	137.7	131.3	18.0	.2
AVERAGE				2.03	13.15	13.03	13.09	13.15	51	18241	144.2	138.2	19.7	2.3
CONF. LIM.				1.77 TO 2.29	12.95 TO 13.36	12.91 TO 13.16	12.95 TO 13.24	12.96 TO 13.33	43 TO 59	12041 TO 24440	131.8 TO 156.6	126.7 TO 149.7	19.3 TO 20.0	-5.4 TO 9.9
STD. DEV.				.56	.43	.27	.31	.39	17	13245	26.6	24.6	.8	16.4

Table IX-30

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 ROAD DATA (WINTER)

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
5-2	CHEV	3453	6190	2038	1605	2547	1639	1.50	12.82	.0233	.0418	.0137	.0100	.0180	.0367	.2046	2.747
5-4	CHEV	3540	6348	2037	1752	2559	1625	1.25	13.35	.0230	.0413	.0132	.0106	.0175	.0351	.1641	2.757
21-8	IHC	3297	5964	1208	1735	3021	1745	1.94	13.55	.0169	.0305	.0062	.0081	.0162	.0297	.2003	2.203
21-9	IHC	3389	6472	1388	1472	3612	1606	2.22	13.73	.0180	.0343	.0073	.0069	.0201	.0283	.2384	2.312
22-8	GMC	3334	6437	1427	2237	2774	1437	2.03	11.53	.0185	.0357	.0079	.0116	.0161	.0264	.2277	2.029
22-9	GMC	3479	6460	1432	1743	3285	1860	2.07	11.91	.0200	.0371	.0082	.0091	.0198	.0354	.2406	2.170
23-8	FORD	11336	16853	1937	4958	9959	1880	2.47	12.80	.0566	.0842	.0097	.0223	.0522	.0312	.2491	2.031
23-9	FORD	10032	14827	1785	4540	8502	2051	2.38	13.16	.0493	.0729	.0088	.0203	.0438	.0335	.2366	2.055
24-1	FORD	4511	8893	1131	3395	4367	1488	3.81	12.74	.0292	.0576	.0073	.0206	.0297	.0320	.4991	2.624
24-2	FORD	4597	9025	1164	3082	4779	1481	3.75	12.43	.0306	.0601	.0077	.0190	.0334	.0328	.5047	2.631
26-8	FORD	6289	10230	941	3650	5630	1316	4.12	12.30	.0418	.0681	.0063	.0225	.0393	.0291	.5540	2.600
26-9	FORD	6025	9916	856	3723	5336	1448	3.86	12.43	.0410	.0675	.0058	.0236	.0381	.0327	.5315	2.686
28-1	IHC	2359	5225	1802	1309	2114	917	5.81	11.54	.0163	.0361	.0124	.0083	.0153	.0210	.8112	2.531
28-8	IHC	2604	5581	1840	1498	2243	873	5.95	11.30	.0179	.0384	.0126	.0096	.0162	.0199	.8273	2.466
30-8	CHEV	3705	7149	2287	2080	2774	1510	2.32	12.67	.0246	.0475	.0152	.0130	.0193	.0333	.3115	2.671
30-9	CHEV	4100	7627	2221	2280	3118	1632	2.23	12.49	.0281	.0523	.0152	.0147	.0224	.0372	.3091	2.722
36-1	DODGE	5268	9398	1639	2618	5141	1166	3.30	12.41	.0254	.0453	.0079	.0114	.0260	.0187	.3222	1.903
36-3	DODGE	6004	10430	1805	2870	5755	1156	3.44	12.42	.0312	.0542	.0094	.0134	.0313	.0199	.3607	2.049
48-1	IHC	2900	5549	788	1851	2911	2005	1.79	13.21	.0145	.0278	.0039	.0086	.0153	.0333	.1812	2.101
48-8	IHC	3169	6054	856	2076	3122	1920	1.93	13.19	.0154	.0295	.0042	.0094	.0159	.0310	.1900	2.039
AVERAGE		4669	8231	1529	2525	4177	1537	2.91	12.60	.0271	.0481	.0091	.0137	.0253	.0299	.3582	2.366
COEF. LIM.		3566 TO 5772	6775 TO 9686	1306 TO 1751	2030 TO 3019	3199 TO 5155	1381 TO 1693	2.29 TO 3.53	12.29 TO 12.91	.0215 TO .0326	.0406 TO .0556	.0075 TO .0108	.0110 TO .0163	.0201 TO .0304	.0272 TO .0326	.2647 TO .4517	2.225 TO 2.508
STD. DEV.		2356	3110	475	1056	2088	333	1.32	.67	.0118	.0160	.0035	.0056	.0110	.0058	.1998	.302

Table IX-31

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 ROAD DATA (WINTER)

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
5-2	CHEV	3606	6464	2128	1676	2660	1711	1.57	13.39	.0243	.0436	.0143	.0104	.0188	.0383	.2136	2.868
5-4	CHEV	3573	6407	2056	1760	2583	1640	1.26	13.47	.0232	.0417	.0134	.0107	.0176	.0354	.1656	2.783
21-8	IHC	3297	5964	1208	1735	3021	1745	1.94	13.55	.0169	.0305	.0062	.0081	.0162	.0297	.2003	2.203
21-9	IHC	3389	6472	1388	1472	3612	1606	2.22	13.73	.0180	.0343	.0073	.0069	.0201	.0283	.2384	2.312
22-8	GMC	3795	7329	1624	2547	3158	1636	2.32	13.13	.0210	.0406	.0090	.0133	.0183	.0301	.2593	2.310
22-9	GMC	3839	7129	1580	1923	3625	2053	2.29	13.14	.0220	.0409	.0091	.0100	.0218	.0391	.2655	2.395
23-8	FORD	11538	17155	1972	5046	10137	1914	2.51	13.03	.0576	.0857	.0098	.0227	.0531	.0317	.2536	2.067
23-9	FORD	10032	14827	1785	4540	8502	2051	2.38	13.16	.0493	.0729	.0088	.0203	.0438	.0335	.2366	2.055
24-1	FORD	4511	8893	1131	3395	4367	1488	3.81	12.74	.0292	.0576	.0073	.0206	.0297	.0320	.4991	2.624
24-2	FORD	4597	9025	1164	3082	4779	1481	3.75	12.43	.0306	.0601	.0077	.0190	.0334	.0328	.5047	2.631
26-8	FORD	6289	10230	941	3659	5630	1316	4.12	12.30	.0418	.0681	.0063	.0225	.0393	.0291	.5540	2.600
26-9	FORD	6025	9916	856	3723	5336	1448	3.86	12.43	.0410	.0675	.0058	.0236	.0381	.0327	.5315	2.686
28-1	IHC	2359	5225	1802	1309	2114	917	5.81	11.54	.0163	.0361	.0124	.0083	.0153	.0210	.8112	2.531
28-8	IHC	2604	5581	1840	1498	2243	873	5.95	11.30	.0179	.0384	.0126	.0096	.0162	.0199	.8273	2.466
30-8	CHEV	3829	7390	2364	2159	2967	1561	2.40	13.09	.0254	.0491	.0157	.0134	.0200	.0344	.3220	2.761
30-9	CHEV	4306	8011	2332	2404	3274	1714	2.34	13.12	.0295	.0549	.0160	.0154	.0236	.0390	.3246	2.858
36-1	DODGE	5309	9471	1652	2638	5180	1175	3.33	12.51	.0256	.0457	.0080	.0115	.0262	.0188	.3247	1.917
36-3	DODGE	6011	10442	1807	2873	5762	1157	3.44	12.44	.0312	.0542	.0094	.0135	.0314	.0199	.3612	2.051
48-1	IHC	2923	5594	794	1866	2934	2021	1.80	13.32	.0146	.0280	.0040	.0086	.0154	.0336	.1826	2.117
48-8	IHC	3190	6093	862	2090	3142	1932	1.94	13.27	.0155	.0297	.0042	.0094	.0160	.0312	.1913	2.053
AVERAGE		4751	8380	1564	2570	4246	1571	2.95	12.85	.0275	.0490	.0094	.0139	.0257	.0305	.3634	2.414
CONF. LIM.		3648 TO 5853	6932 TO 9829	1331 TO 1796	2078 TO 3062	3271 TO 5221	1407 TO 1735	2.35 TO 3.56	12.55 TO 13.15	.0220 TO .0331	.0416 TO .0564	.0077 TO .0110	.0113 TO .0165	.0206 TO .0308	.0276 TO .0334	.2711 TO .4556	2.271 TO 2.558
STD. DEV.		2356	3095	496	1051	2083	350	1.29	.64	.0118	.0158	.0036	.0055	.0109	.0062	.1971	.307

Table IX-32

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 4 ROAD DATA (WINTER)

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
5-2	CHEV	366 V-8	30000	2.26	13.90	13.28	13.59	13.85	64	4360	198.4	187.6	20.5	11.1
5-4	CHEV	366 V-8	30000	2.20	14.10	13.76	13.93	14.09	72	4383	192.2	180.9	21.4	2.6
21-8	IHC	345 V-8	24000	1.86	13.64	14.47	14.05	13.66	72	2974	150.0	142.3	20.3	-7.4
21-9	IHC	345 V-8	24000	1.77	13.51	18.99	16.25	13.55	71	2997	155.0	147.4	19.4	-15.8
22-8	GMC	351 V-6	26000	2.77	13.59	13.05	13.32	13.47	72	124976	161.7	154.0	21.4	31.6
22-9	GMC	351 V-6	26000	3.01	13.57	13.08	13.33	13.48	72	124993	167.5	159.5	19.4	25.7
23-8	FORD	361 V-8	25500	1.77	13.41	13.28	13.34	13.40	99	4092	145.6	138.9	20.8	5.6
23-9	FORD	361 V-8	25500	1.70	13.45	13.50	13.47	13.45	105	4115	143.5	136.7	20.4	-1.4
24-1	FORD	477 V-8	41000	1.44	12.88	13.21	13.05	12.93	93	21343	187.1	180.3	21.8	-11.6
24-2	FORD	477 V-8	41000	1.22	12.90	13.02	12.96	12.92	92	21365	192.3	185.3	21.9	-3.7
26-8	FORD	391 V-8	50000	.97	12.75	12.94	12.85	12.79	112	3832	191.4	185.0	20.6	-5.8
26-9	FORD	391 V-8	50000	1.16	12.85	13.02	12.94	12.88	110	3856	196.1	189.2	19.7	-5.0
28-1	IHC	450 I-6	50000	.75	12.08	12.46	12.27	12.17	114	25042	195.5	192.0	20.2	-12.2
28-8	IHC	450 I-6	50000	.75	12.02	12.31	12.16	12.09	107	25065	194.2	191.1	20.6	-9.0
30-8	CHEV	366 V-8	32000	.87	13.47	13.23	13.35	13.44	87	9723	193.7	184.7	21.9	8.6
30-9	CHEV	366 V-8	32000	.96	13.51	13.18	13.34	13.46	87	9745	200.2	190.8	20.4	12.1
36-1	DODGE	361 V-8	24000	2.11	13.08	13.01	13.04	13.07	41	1853	139.7	134.2	23.5	3.0
36-3	DODGE	361 V-8	24000	2.00	13.03	13.01	13.02	13.02	37	1874	150.2	144.4	20.9	.4
48-1	IHC	304 V-8	21000	1.72	13.71	13.55	13.63	13.70	57	39726	146.8	139.2	21.2	2.8
48-8	IHC	304 V-8	21000	1.86	13.64	13.53	13.58	13.63	57	39750	142.6	135.4	20.3	2.3
AVERAGE				1.66	13.25	13.49	13.37	13.25	81	23803	172.2	164.9	20.8	1.7
CONF. LIM.				1.36 TO 1.96	13.00 TO 13.51	12.85 TO 14.13	12.99 TO 13.76	13.01 TO 13.49	70 TO 91	6640 TO 40965	161.2 TO 183.2	154.1 TO 175.8	20.4 TO 21.3	-3.9 TO 7.3
STD. DEV.				.64	.55	1.37	.82	.52	23	36671	23.4	23.2	1.0	12.0

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 301-6

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	306	5.9	9	1.22	373	7.2	13	.26
2	199	.42	13.1	1.11	221	.47	20	.04
3	86	.23	12.3	1.2	103	.28	26	.07
4	98	.59	12.9	1.13	111	.67	10	.06
5	87	1.08	12.9	1.11	97	1.2	5	.06
6	85	.65	13.1	1.11	94	.72	8	.06
7	115	1.26	12.6	1.12	129	1.41	37	.4
8	91	.71	13.1	1.11	101	.79	9	.07
9	7438	4.06	4.5	1.07	7959	4.34	167	.09

TOTALS: HCWTD = 295 COWTD 1.11

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	306	5.9	9	1.22	373	7.2	13	.26
2	88	.39	13.1	1.12	99	.44	9	.04
3	56	.24	12.3	1.2	67	.29	17	.07
4	80	.62	13.1	1.11	89	.69	8	.06
5	71	1.26	13	1.09	77	1.37	4	.06
6	70	.45	13.3	1.1	77	.49	7	.04
7	101	1.25	12.7	1.12	113	1.4	32	.4
8	90	.79	13.3	1.09	98	.86	9	.08
9	6969	4.09	4.7	1.09	7596	4.46	160	.09

TOTALS: HCWTD = 259 COWTD 1.1

AVERAGE COLD CYCLE CONCENTRATION HC= 277 CO= 1.105

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	264	6.04	9.3	1.19	314	7.19	11	.25
2	80	.43	13.6	1.08	86	.46	8	.04
3	49	.24	12.4	1.19	58	.29	15	.07
4	72	.58	13	1.12	81	.65	7	.06
5	85	1.43	13.1	1.08	92	1.54	4	.07
6	72	.55	13.1	1.12	81	.62	7	.06
7	101	1.34	12.5	1.13	114	1.51	32	.43
8	88	.79	12.8	1.13	99	.89	9	.08
9	6077	4.26	4.9	1.14	6928	4.86	145	.1

TOTALS: HCWTD = 238 COWTD 1.17

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	264	6.04	9.3	1.19	314	7.19	11	.26
2	83	.45	12.8	1.14	95	.51	8	.05
3	44	.23	12.2	1.21	53	.28	14	.07
4	79	.64	12.8	1.14	90	.73	8	.06
5	82	1.35	12.8	1.11	91	1.5	4	.07
6	74	.54	12.9	1.13	84	.61	7	.05
7	100	1.31	12.4	1.14	114	1.49	32	.42
8	95	.93	13	1.11	105	1.43	9	.09
9	5875	4.18	4.7	1.13	6932	4.93	146	.1

TOTALS: HCWTD = 239 COWTD 1.17

AVERAGE HOT CYCLE CONCENTRATION HC= 234.5 CO= 1.17

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 251.975 PPM
CARBON MONOXIDE 1.14725 PERCENT

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NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 301-8

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	318	6.44	8.9	1.21	385	7.79	14	.28
2	123	.66	13.3	1.09	134	.72	12	.06
3	84	.24	12.9	1.15	92	.28	24	.07
4	93	.9	13.6	1.06	104	.95	9	.08
5	82	1.39	13.3	1.07	88	1.49	4	.07
6	93	.87	13.6	1.06	99	.92	9	.08
7	133	1.18	13.3	1.07	148	1.26	42	.36
8	114	1.17	13.4	1.06	117	1.24	10	.11
9	7247	4.38	4.7	1.06	7682	4.64	161	.1

TOTALS: HCWTD = 285 COWTD 1.21

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	318	6.44	8.9	1.21	385	7.79	14	.28
2	110	.97	13.4	1.07	118	1.04	11	.09
3	73	.23	13	1.14	83	.26	21	.07
4	95	.89	13.5	1.07	102	.95	9	.08
5	76	1.47	13.2	1.07	81	1.57	4	.07
6	90	.86	13.6	1.06	95	.91	8	.08
7	129	1.11	13.3	1.07	138	1.19	39	.34
8	107	1.24	13.4	1.06	113	1.31	10	.12
9	7454	4.44	5	1.05	7407	4.66	156	.1

TOTALS: HCWTD = 272 COWTD 1.23

AVERAGE COLD CYCLE CONCENTRATION HC= 273.5 CO= 1.22

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	304	6.23	9.6	1.15	350	7.16	13	.26
2	105	.92	13.4	1.07	112	.98	10	.09
3	68	.24	13	1.14	78	.27	20	.07
4	92	.95	13.4	1.07	98	1.02	9	.09
5	68	1.25	13.2	1.08	73	1.35	3	.06
6	90	.87	13.5	1.07	96	.93	9	.08
7	131	1.07	13.3	1.07	140	1.14	40	.32
8	105	1.21	13.4	1.06	111	1.28	10	.11
9	7362	4.39	5	1.05	7415	4.61	156	.1

TOTALS: HCWTD = 270 COWTD 1.18

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	304	6.23	9.6	1.15	350	7.16	13	.26
2	113	.93	13.6	1.06	120	.99	11	.09
3	66	.22	13	1.14	75	.25	19	.06
4	83	.83	13.5	1.07	94	.89	8	.04
5	68	1.31	13.1	1.09	74	1.43	3	.07
6	84	.8	13.4	1.08	91	.86	8	.08
7	130	.94	13.4	1.07	139	1.01	39	.32
8	93	.97	13.4	1.07	105	1.04	9	.09
9	6466	4.29	5.4	1.04	7141	4.46	154	.12

TOTALS: HCWTD = 264 COWTD 1.11

AVERAGE HOT CYCLE CONCENTRATION HC= 265 CO= 1.145

FOR CYCLE COMPOSITE EMISSION: HYDROCARBON 269.725

CARBON MONOXIDE 1.17125

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 303-7

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	289	3.51	10.9	1.16	335	4.07	12	.15
2	108	.18	13.1	1.13	122	.2	11	.02
3	93	.13	12.5	1.19	111	.15	29	.04
4	83	.2	13.2	1.12	93	.22	8	.02
5	51	.2	13.2	1.12	57	.22	3	.01
6	71	.17	13.1	1.13	80	.19	7	.02
7	126	2.11	13	1.06	134	2.24	38	.63
8	81	.24	13.5	1.09	88	.26	8	.02
9	7464	3.29	4.8	1.08	8061	3.55	169	.07

TOTALS: HCWTD = 285 COWTD .98

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	289	3.51	10.9	1.16	335	4.07	12	.15
2	81	.17	13	1.14	92	.19	8	.02
3	75	.13	12.5	1.19	89	.15	23	.04
4	74	.2	13.3	1.11	82	.22	7	.02
5	44	.2	13.3	1.12	49	.22	2	.01
6	65	.19	13.2	1.12	73	.21	6	.02
7	118	2.17	13	1.06	125	2.3	35	.65
8	78	.26	13.4	1.1	86	.29	8	.03
9	7183	3.32	4.7	1.11	7973	3.69	167	.08

TOTALS: HCWTD = 268 COWTD 1.02

AVERAGE COLD CYCLE CONCENTRATION HC= 276.5 CO= 1.

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	271	4.11	10.3	1.19	322	4.89	12	.18
2	74	.17	12.9	1.15	85	.2	8	.02
3	73	.14	12.5	1.19	87	.17	22	.04
4	71	.22	13.3	1.11	79	.24	7	.02
5	44	.2	13.3	1.12	49	.22	2	.01
6	67	.18	13.1	1.13	76	.2	7	.02
7	117	2.14	12.9	1.06	124	2.27	35	.64
8	76	.26	13.4	1.1	84	.29	7	.03
9	7057	3.3	4.7	1.12	7904	3.7	166	.08

TOTALS: HCWTD = 266 COWTD 1.04

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	271	4.11	10.3	1.19	322	4.89	12	.18
2	77	.17	12.9	1.15	89	.2	8	.02
3	72	.14	12.3	1.21	87	.17	22	.04
4	71	.2	13	1.14	81	.23	7	.02
5	41	.2	13	1.14	47	.23	2	.01
6	63	.18	12.8	1.16	73	.21	6	.02
7	117	2.12	12.6	1.09	128	2.31	36	.65
8	74	.26	13.1	1.13	84	.29	7	.03
9	7183	3.34	4.6	1.11	7973	3.71	167	.08

TOTALS: HCWTD = 267 COWTD 1.05

AVERAGE HOT CYCLE CONCENTRATION HC= 266.5 CO= 1.045

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 270. PPM
CARBON MONOXIDE 1.02925 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 304-6

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	297	3.18	11.3	1.14	339	3.63	12	.13
2	192	1.55	13.3	1.05	202	1.63	18	.15
3	112	.19	13.5	1.09	122	.21	31	.05
4	141	1.17	13.6	1.05	148	1.23	13	.11
5	146	2.17	13.1	1.05	153	2.28	7	.11
6	142	1.44	13.5	1.04	148	1.5	13	.13
7	135	2.94	12.7	1.05	142	3.09	40	.87
8	135	1.46	13.4	1.05	142	1.53	13	.14
9	7774	2.82	5.3	1.04	8085	2.93	170	.06

TOTALS: HCWTD = 317 COWTD 1.75

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	297	3.18	11.3	1.14	339	3.63	12	.13
2	137	1.07	13.5	1.06	145	1.13	13	.1
3	92	.19	13.5	1.1	101	.21	26	.05
4	126	1.33	13.5	1.05	132	1.4	12	.12
5	133	2.25	13.1	1.04	138	2.34	6	.11
6	130	1.34	13.5	1.05	136	1.41	12	.13
7	121	2.95	12.7	1.05	127	3.1	36	.88
8	126	1.91	13.4	1.04	131	1.99	12	.18
9	7917	3.01	5.2	1.03	8155	3.1	171	.07

TOTALS: HCWTD = 300 COWTD 1.77

AVERAGE COLD CYCLE CONCENTRATION HC= 308.5 CO= 1.76

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	270	3.61	11.1	1.14	308	4.12	11	.15
2	135	1.05	13.6	1.05	142	1.1	13	.1
3	88	.19	13.6	1.09	96	.21	25	.05
4	123	1.34	13.6	1.04	128	1.39	11	.12
5	133	2.23	13.1	1.05	140	2.34	7	.11
6	134	1.41	13.5	1.05	141	1.48	13	.13
7	124	2.93	12.7	1.05	130	3.08	37	.87
8	128	1.51	13.4	1.05	134	1.59	12	.14
9	7891	2.98	5	1.04	8207	3.1	172	.07

TOTALS: HCWTD = 301 COWTD 1.74

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	270	3.61	11.1	1.14	308	4.12	11	.15
2	135	1.14	13.5	1.06	143	1.21	13	.11
3	89	.19	13.5	1.1	98	.21	25	.05
4	126	1.37	13.4	1.06	134	1.45	12	.13
5	135	2.27	13	1.05	142	2.38	7	.11
6	133	1.42	13.3	1.06	141	1.51	13	.13
7	121	2.91	12.7	1.05	127	3.06	36	.87
8	130	1.79	13.1	1.06	138	1.9	12	.17
9	7917	2.83	4.9	1.05	8313	2.97	175	.06

TOTALS: HCWTD = 304 COWTD 1.78

AVERAGE HOT CYCLE CONCENTRATION HC= 302.5 CO= 1.76

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 304.6 PPM
CARBON MONOXIDE 1.76 -- PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 304-7

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	461	3.16	11.4	1.12	516	3.54	19	.13
2	262	.95	13.6	1.05	275	1	24	.09
3	143	.14	13.6	1.09	156	.15	40	.04
4	145	1.05	13.8	1.04	151	1.09	13	.1
5	144	1.8	13.3	1.05	151	1.89	7	.09
6	142	1.16	13.8	1.03	146	1.19	13	.11
7	148	2.82	13	1.03	152	2.9	43	.82
8	139	1.28	13.6	1.04	145	1.33	13	.12
9	7895	2.73	5.1	1.04	8211	2.84	172	.06

TOTALS: HCWTD = 344 COWTD 1.56

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	461	3.16	11.4	1.12	516	3.54	19	.13
2	148	1.09	13.6	1.05	155	1.14	14	.1
3	108	.16	13.5	1.1	119	.18	31	.05
4	138	1.19	13.5	1.05	145	1.25	13	.11
5	139	2.04	13	1.06	147	2.16	7	.1
6	141	1.31	13.5	1.05	148	1.38	13	.12
7	145	2.76	12.7	1.05	152	2.9	43	.82
8	139	1.5	13.4	1.05	146	1.57	13	.14
9	7932	2.68	5	1.05	8329	2.81	175	.06

TOTALS: HCWTD = 328 COWTD 1.63

AVERAGE COLD CYCLE CONCENTRATION HC= 336 CO= 1.595

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	344	3.95	10.9	1.14	347	4.5	12	.16
2	148	1.15	13.6	1.05	155	1.21	14	.11
3	99	.16	13.6	1.09	108	.17	28	.04
4	134	1.34	13.5	1.05	141	1.41	13	.13
5	138	2.17	13	1.05	145	2.28	7	.11
6	142	1.39	13.4	1.05	149	1.46	13	.13
7	130	2.79	12.7	1.05	136	2.93	38	.83
8	135	1.46	13.4	1.05	143	1.53	13	.14
9	7934	2.91	4.9	1.05	8368	3.06	176	.06

TOTALS: HCWTD = 314 COWTD 1.71

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	344	3.95	10.9	1.14	347	4.5	12	.16
2	144	1.1	13.6	1.05	151	1.15	13	.1
3	99	.15	13.6	1.09	108	.16	28	.04
4	130	1.31	13.6	1.04	135	1.36	12	.12
5	140	2.27	13	1.05	149	2.38	7	.11
6	143	2.12	12.8	1.07	153	2.34	14	.21
7	131	3.01	12.6	1.05	138	3.16	39	.89
8	143	1.61	13.3	1.06	152	1.6	14	.14
9	7757	3	4.5	1.06	8328	3.18	175	.07

TOTALS: HCWTD = 314 COWTD 1.84

AVERAGE HOT CYCLE CONCENTRATION HC= 314 CO= 1.775

CYCLE COMPOSITE EMISSION: HYDROCARBON 321.7 PPM
CARBON MONOXIDE 1.712 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

Run 305-5 — **California 9-Mode Truck Schedule**

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	349	5.41	11.2	1.05	366	5.68	13	.2
2	246	1.36	13.5	1.04	256	1.41	23	.13
3	204	.93	13.5	1.06	216	.99	56	.25
4	200	1.16	13.7	1.04	208	1.21	19	.11
5	190	1.39	13.6	1.04	198	1.45	9	.07
6	204	1.15	13.7	1.04	212	1.2	19	.11
7	204	3.73	12.9	1	204	3.73	58	1.06
8	190	1.16	13.7	1.04	198	1.21	18	.11
9	6922	3.82	6.1	1	6922	3.82	145	.08

TOTALS: HCWTD = 360 COWTD 2.12

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	349	5.41	11.2	1.05	366	5.68	13	.2
2	214	1.14	13.7	1.04	223	1.19	20	.11
3	200	1.26	13.5	1.05	210	1.32	54	.34
4	198	1.19	13.7	1.03	204	1.23	18	.11
5	190	1.49	13.6	1.03	196	1.53	9	.07
6	200	1.22	13.6	1.04	208	1.27	19	.11
7	209	3.75	12.4	1.04	217	3.9	61	1.1
8	181	1.28	13.7	1.03	186	1.32	17	.12
9	6916	3.82	6	1.01	6985	3.86	147	.08

TOTALS: HCWTD = 358 COWTD 2.24

AVERAGE COLD CYCLE CONCENTRATION HC= 359 C0= 2.18

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	372	6.09	10.9	1.05	391	6.39	14	.23
2	217	1.15	13.7	1.04	226	1.2	20	.11
3	200	1.21	13.5	1.05	210	1.27	54	.33
4	192	1.25	13.7	1.03	198	1.29	18	.11
5	189	1.49	13.6	1.03	195	1.53	9	.07
6	200	1.24	13.7	1.03	206	1.28	18	.11
7	207	3.81	12.4	1.03	213	3.92	60	1.11
8	192	1.31	13.7	1.03	198	1.35	18	.12
9	6768	3.91	6.2	1.01	6836	3.95	144	.08

TOTALS: HCWTD = 355 C0WTD 2.27

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	372	6.09	10.9	:.05	391	6.39	14	.23
2	217	1.23	13.7	1.03	224	1.27	20	.11
3	200	1.3	13.6	1.04	208	1.35	53	.35
4	200	1.43	13.7	1.03	206	1.47	18	.13
5	190	1.31	13.6	1.04	198	1.36	9	.06
6	207	1.25	13.7	1.03	213	1.29	19	.11
7	211	3.81	12.4	1.03	217	3.92	61	1.11
8	194	1.31	13.7	1.03	200	1.35	18	.12
9	6820	3.91	6.1	1.01	6888	3.95	145	.08

TOTALS: HCWTD = 357 C0WTD 2.3

AVERAGE HOT CYCLE CONCENTRATION HC= 356 C0= 2.285

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 357.05 PPM

CARBON MONOXIDE 2.24825 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 305-6

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	482	7.26	9.7	1.09	525	7.91	19	.28
2	256	1.36	13.8	1.02	261	1.39	23	.12
3	218	1.5	13.3	1.05	229	1.57	59	.4
4	200	1.19	13.6	1.04	208	1.24	19	.11
5	181	1.36	13.5	1.04	188	1.41	9	.07
6	200	1.19	13.6	1.04	208	1.24	19	.11
7	207	3.81	12.2	1.05	217	4	61	1.13
8	190	1.29	13.6	1.04	198	1.34	18	.12
9	6442	3.9	5.9	1.05	6764	4.09	142	.09

TOTALS: HCWTD = 369 C0WTD 2.43

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	482	7.26	9.7	1.09	525	7.91	19	.28
2	209	1.24	13.6	1.04	217	1.29	19	.11
3	195	1.31	13.4	1.05	205	1.38	53	.35
4	190	1.23	13.6	1.04	198	1.28	18	.11
5	179	1.41	13.5	1.04	186	1.47	9	.07
6	195	1.21	13.6	1.04	203	1.26	18	.11
7	200	3.82	12.2	1.05	210	4.01	59	1.13
8	184	1.35	13.6	1.04	191	1.4	17	.12
9	6284	3.83	6	1.06	6661	4.06	140	.09

TOTALS: HCWTD = 352 C0WTD 2.37

AVERAGE COLD CYCLE CONCENTRATION HC= 360.5 C0= 2.4

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	402	6.13	10.7	1.06	426	6.5	15	.23
2	209	1.26	13.6	1.04	217	1.31	19	.12
3	190	1.21	13.4	1.06	201	1.28	52	.33
4	189	1.34	13.5	1.04	197	1.39	18	.12
5	177	1.58	13.5	1.04	184	1.64	9	.08
6	193	1.35	13.6	1.04	201	1.4	18	.12
7	200	3.88	12.2	1.05	210	4.07	59	1.15
8	186	1.32	13.5	1.05	195	1.39	17	.12
9	6275	3.95	5.9	1.06	6651	4.19	140	.09

TOTALS: HCWTD = 347 C0WTD 2.36

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	402	6.13	10.7	1.06	426	6.5	15	.23
2	215	1.28	13.5	1.04	224	1.33	20	.12
3	194	1.28	13.2	1.07	208	1.37	53	.35
4	192	1.28	13.4	1.05	202	1.34	18	.12
5	187	1.58	13.2	1.06	198	1.67	9	.08
6	200	1.29	13.4	1.05	210	1.35	19	.12
7	211	3.83	12.1	1.05	222	4.02	63	1.14
8	190	1.42	13.4	1.05	199	1.49	18	.13
9	6160	3.91	5.9	1.07	6591	4.18	138	.09

TOTALS: HCWTD = 353 C0WTD 2.38

AVERAGE HOT CYCLE CONCENTRATION HC= 350 C0= 2.37

IX-43

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 353.675 PPM

CARBON MONOXIDE 2.3805 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 308-6

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1149	7.04	6.4	1.36	1563	9.57	56	.34
2	164	.47	13.7	1.06	174	.5	15	.04
3	130	.51	13.7	1.06	138	.54	35	.14
4	121	.32	13.7	1.07	129	.34	11	.03
5	119	.55	13.7	1.06	126	.58	6	.03
6	114	.45	13.8	1.06	121	.48	11	.04
7	161	5.33	11	1.06	171	6.23	48	1.76
8	106	.34	13.8	1.07	113	.36	10	.03
9	7942	3.56	3.9	1.1	8737	3.92	183	.08

TOTALS: HCWTD = 375 COWTD 2.49

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1149	7.04	6.4	1.36	1563	9.57	56	.34
2	108	.45	13.6	1.08	117	.49	10	.04
3	89	.57	13.6	1.07	95	.61	24	.16
4	98	.42	13.8	1.06	104	.45	9	.04
5	98	.73	13.8	1.05	103	.77	5	.04
6	98	.43	13.8	1.06	104	.46	9	.04
7	144	5.84	11	1.07	154	6.25	44	1.77
8	97	.35	13.9	1.06	103	.37	9	.03
9	7592	3.51	3.8	1.14	8655	4	182	.08

TOTALS: HCWTD = 348 COWTD 2.54

AVERAGE COLD CYCLE CONCENTRATION HC= 361.5 CO= 2.515

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	942	7.79	6.6	1.31	1234	10.2	44	.37
2	108	.49	13.7	1.07	116	.52	10	.05
3	89	.57	13.7	1.07	95	.61	24	.16
4	94	.42	13.8	1.06	100	.45	9	.04
5	97	.71	13.8	1.05	102	.75	5	.04
6	97	.43	13.8	1.06	103	.46	9	.04
7	142	5.81	11	1.07	152	6.22	43	1.76
8	93	.39	13.8	1.06	99	.41	9	.04
9	7374	3.71	4.1	1.13	3333	4.19	175	.09

TOTALS: HCWTD = 328 COWTD 2.59

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	942	7.79	6.6	1.31	1234	10.2	44	.37
2	106	.45	13.7	1.07	113	.48	10	.04
3	87	.54	13.6	1.07	93	.58	24	.15
4	94	.4	13.8	1.06	100	.42	9	.04
5	98	.73	13.6	1.07	105	.78	5	.04
6	94	.42	13.7	1.07	101	.45	9	.04
7	144	5.88	10.9	1.07	154	6.29	44	1.78
8	96	.37	13.7	1.07	103	.4	9	.04
9	7528	3.62	3.8	1.14	8582	4.13	180	.09

TOTALS: HCWTD = 334 COWTD 2.59

AVERAGE HOT CYCLE CONCENTRATION HC= 331 CO= 2.59

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 341.675 PPM

CARBON MONOXIDE 2.56375 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 308-7

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	372	7.31	7.4	1.31	487	9.58	18	.34
2	143	.62	13.7	1.06	152	.66	14	.06
3	106	.52	13.6	1.07	113	.56	29	.14
4	98	.32	13.8	1.07	105	.34	9	.03
5	97	.73	13.7	1.06	103	.77	5	.04
6	94	.34	13.8	1.07	101	.36	9	.03
7	137	5.65	11	1.07	147	6.05	42	1.71
8	91	.27	13.8	1.07	97	.29	9	.03
9	6835	4.11	4.4	1.13	7724	4.64	162	

.1

TOTALS: HCWTD = 297 COWTD 2.48

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	372	7.31	7.4	1.31	487	9.58	18	.34
2	91	.35	13.7	1.07	97	.37	9	.03
3	85	.51	13.7	1.07	91	.55	23	.14
4	85	.29	13.9	1.06	90	.31	8	.03
5	85	.63	13.8	1.06	90	.67	4	.03
6	87	.34	13.8	1.07	93	.36	8	.03
7	129	5.85	11	1.07	138	6.26	39	1.77
8	88	.32	13.9	1.06	93	.34	8	.03
9	7082	4.24	4.3	1.11	7861	4.71	165	

.1

TOTALS: HCWTD = 282 COWTD 2.5

AVERAGE COLD CYCLE CONCENTRATION HC= 289.5 CO= 2.49

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	408	8.1	7.3	1.28	522	10.37	19	.37
2	89	.37	13.7	1.07	95	.4	8	.04
3	80	.53	13.7	1.07	86	.57	22	.15
4	83	.31	13.9	1.06	88	.33	8	.03
5	85	.6	13.8	1.06	90	.64	4	.03
6	83	.35	13.9	1.06	88	.37	8	.03
7	126	5.74	11	1.07	135	6.14	38	1.74
8	88	.31	13.8	1.07	94	.33	8	.03
9	6710	4.13	4.4	1.14	7649	4.71	161	

.1

TOTALS: HCWTD = 276 COWTD 2.52

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	408	8.1	7.3	1.28	522	10.37	19	.37
2	103	.4	13.8	1.06	109	.42	10	.04
3	80	.56	13.7	1.07	86	.6	22	.15
4	87	.35	13.9	1.06	92	.37	8	.03
5	85	.54	13.8	1.06	90	.57	4	.03
6	86	.32	13.8	1.07	92	.34	8	.03
7	129	5.72	11	1.07	138	6.12	39	1.73
8	86	.28	13.8	1.07	92	.3	8	.03
9	6748	4.2	4.4	1.13	7625	4.75	160	

.1

TOTALS: HCWTD = 273 COWTD 2.51

AVERAGE HOT CYCLE CONCENTRATION HC= 277 CO= 2.515

IX-45

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 281.375 PPM

CARBON MONOXIDE 2.5625 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 311-2

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	574	5.84	9.8	1.13	649	6.6	23	.24
2	229	1.39	13.3	1.05	240	1.46	21	.13
3	200	1.38	13.4	1.05	210	1.45	54	.37
4	163	1.46	13.3	1.06	173	1.55	15	.14
5	140	1.18	13.4	1.06	148	1.25	7	.06
6	149	1.31	13.3	1.06	158	1.39	14	.12
7	198	4.74	11.5	1.07	212	5.07	60	1.43
8	166	1.87	13.1	1.06	176	1.98	16	.18
9	10986	.2	1	1.24	13623	.25	286	.01

TOTALS: HCWTD = 496 COWTD 2.68

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	574	5.84	9.8	1.13	649	6.6	23	.24
2	218	1.73	13	1.07	233	1.85	21	.16
3	190	2.1	13	1.05	199	2.2	51	.57
4	172	2.23	12.9	1.06	182	2.36	16	.21
5	143	1.76	13.1	1.06	152	1.87	7	.09
6	153	1.82	13.2	1.05	161	1.91	14	.17
7	186	4.67	11.4	1.08	201	5.04	57	1.43
8	172	2.51	12.8	1.05	181	2.64	16	.23
9	10986	.32	1	1.23	13513	.39	284	.01

TOTALS: HCWTD = 489 COWTD 3.11

AVERAGE COLD CYCLE CONCENTRATION HC= 492.5 CO= 2.895

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	580	1.28	.7	7.81	4530	10	163	.36
2	186	1.87	13	1.06	197	1.98	18	.18
3	168	2.04	12.9	1.06	178	2.16	46	.56
4	160	2.29	12.7	1.07	171	2.45	15	.22
5	138	1.74	13	1.07	148	1.86	7	.09
6	153	1.94	13	1.06	162	2.06	14	.18
7	187	4.71	11.4	1.03	202	5.09	57	1.44
8	175	2.62	12.6	1.06	185	2.78	16	.25
9	10986	.34	1	1.23	13513	.42	284	.01

TOTALS: HCWTD = 620 COWTD 3.29

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	580	1.28	.7	7.81	4530	10	163	.36
2	186	2.15	12.8	1.07	199	2.3	18	.2
3	168	1.98	13	1.06	178	2.1	46	.54
4	158	2.23	12.7	1.07	169	2.39	15	.21
5	141	1.64	13.1	1.07	151	1.75	7	.08
6	154	1.91	13	1.06	163	2.02	15	.18
7	184	4.7	11.3	1.03	199	5.08	56	1.44
8	172	2.36	12.4	1.07	184	3.06	16	.27
9	10986	.32	.9	1.25	13733	.4	288	.01

TOTALS: HCWTD = 624 COWTD 3.29

AVERAGE HOT CYCLE CONCENTRATION HC= 622 CO= 3.29

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 576.675 PPM
CARBON MONOXIDE 3.15175 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 311-3

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	516	5.85	9.8	1.13	583	6.61	21	.24
2	275	1.64	13.2	1.05	289	1.72	26	.15
3	243	1.75	13.1	1.06	258	1.85	66	.48
4	201	1.02	13.2	1.08	217	1.1	19	.1
5	174	.9	13.3	1.08	188	.97		.05
6	195	1.55	13.2	1.06	207	1.64	18	.15
7	230	5.27	11.1	1.07	246	5.64	70	1.6
8	206	2.35	12.7	1.07	220	2.51	20	.22
9	10986	.31	.7	1.27	13952	.39	293	.01

TOTALS: HCWTD = 542 COWTD 3.

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	516	5.85	9.8	1.13	583	6.61	21	.24
2	256	1.73	12.9	1.07	274	1.85	24	.16
3	187	1.85	13	1.06	198	1.96	51	.5
4	177	2.1	12.8	1.07	189	2.25	17	.2
5	150	1.43	13.1	1.07	160	1.53	8	.07
6	168	1.83	13	1.07	180	1.96	16	.17
7	201	5.03	11.2	1.08	217	5.43	61	1.54
8	185	2.53	12.6	1.07	198	2.71	18	.24
9	10986	.25	.8	1.26	13842	.31	291	.01

TOTALS: HCWTD = 507 COWTD 3.13

AVERAGE COLD CYCLE CONCENTRATION HC= 524.5 CO= 3.065

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	541	7.4	8.7	1.16	628	8.58	23	.31
2	246	1.94	12.8	1.07	263	2.08	23	.19
3	179	1.9	12.9	1.07	192	2.03	49	.52
4	169	2.17	12.7	1.07	181	2.32	16	.21
5	143	1.3	13	1.09	156	1.42	7	.07
6	159	1.68	12.9	1.08	172	1.81	15	.16
7	193	4.95	11.1	1.09	210	5.4	59	1.53
8	179	2.58	12.5	1.07	192	2.76	17	.25
9	10986	.29	.8	1.26	13842	.37	291	.01

TOTALS: HCWTD = 500 COWTD 3.25

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	541	7.4	8.7	1.16	628	8.58	23	.31
2	237	1.86	12.7	1.08	256	2.01	23	.18
3	169	1.83	12.8	1.08	183	2.03	47	.52
4	162	2.1	12.7	1.08	175	2.27	16	.2
5	138	1.21	13	1.09	150	1.32	7	.06
6	157	1.71	12.9	1.08	170	1.85	15	.16
7	190	4.9	11.1	1.09	207	5.34	59	1.51
8	181	2.64	12.5	1.07	194	2.82	17	.25
9	10986	.35	.8	1.25	13733	.44	288	.01

TOTALS: HCWTD = 495 COWTD 3.2

AVERAGE HOT CYCLE CONCENTRATION HC= 497.5 CO= 3.225

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 506.95 PPM

CARBON MONOXIDE 3.169 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 312-1

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	503	4.64	9.4	1.23	619	5.71	22	.21
2	205	1.76	13	1.06	217	1.87	19	.17
3	139	.28	13.5	1.09	152	.31	39	.08
4	162	1.87	13	1.06	172	1.98	15	.18
5	149	2.36	12.7	1.07	159	2.53	7	.12
6	156	1.58	13.2	1.06	165	1.67	15	.15
7	174	3.36	12.1	1.07	186	3.6	53	1.02
8	169	2.21	12.8	1.07	181	2.36	16	.21
9	5628	3.95	4.5	1.24	6979	4.9	147	.1

TOTALS: HCWTD = 333 COWTD 2.24

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	503	4.64	9.4	1.23	619	5.71	22	.21
2	167	1.83	13	1.07	179	1.96	16	.17
3	126	.27	13.5	1.09	137	.29	35	.07
4	152	1.65	13.1	1.07	163	1.77	15	.16
5	137	1.92	13	1.06	145	2.04	7	.1
6	148	1.44	13.3	1.06	157	1.53	14	.14
7	166	3.52	11.9	1.08	179	3.8	51	1.08
8	168	2.18	12.9	1.06	178	2.31	16	.21
9	5512	4.15	4.6	1.23	6780	5.1	142	.11

TOTALS: HCWTD = 318 COWTD 2.25

AVERAGE COLD CYCLE CONCENTRATION HC= 325.5 CO= 2.245

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	525	5.01	9.4	1.21	635	6.06	23	.22
2	162	1.93	13	1.06	172	2.05	15	.18
3	124	.29	13.5	1.09	135	.32	35	.08
4	144	1.91	13	1.06	153	2.02	14	.18
5	137	2.06	12.9	1.07	147	2.2	7	.1
6	144	1.47	13.3	1.06	153	1.56	14	.14
7	172	3.35	12	1.08	186	3.62	53	1.02
8	172	2.02	13.1	1.05	181	2.12	16	.19
9	5839	4.04	4.3	1.23	7182	4.97	151	.1

TOTALS: HCWTD = 323 COWTD 2.21

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	525	5.01	9.4	1.21	635	6.06	23	.22
2	165	2.02	12.9	1.07	177	2.16	16	.19
3	123	.29	13.6	1.08	138	.31	35	.08
4	150	1.8	13.1	1.06	159	1.91	14	.17
5	141	2.08	12.9	1.07	151	2.23	7	.1
6	149	1.59	13	1.08	161	1.72	14	.15
7	171	3.14	12.2	1.08	185	3.39	52	.96
8	163	2.02	13.1	1.05	171	2.12	15	.19
9	5722	4.01	4.4	1.24	7095	4.97	149	.1

TOTALS: HCWTD = 325 COWTD 2.16

AVERAGE HOT CYCLE CONCENTRATION HC= 326.5 CO= 2.185

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 326.15 PPM
CARBON MONOXIDE 2.206 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 312-4

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	730	3.93	9.8	1.2	876	4.72	32	.17
2	221	1.55	13.3	1.05	232	1.63	21	.15
3	145	.14	13.6	1.09	158	.15	41	.04
4	159	1.56	13.3	1.05	167	1.64	15	.15
5	152	2.02	13.1	1.05	160	2.12	8	.1
6	153	1.28	13.5	1.05	161	1.34	14	.12
7	190	4.04	12	1.06	201	4.28	57	1.21
8	177	2.19	13.1	1.04	184	2.28	16	.2
9	5512	3.82	4.9	1.22	6725	4.66	141	.1

TOTALS: HCWTD = 345 COWTD 2.24

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	730	3.93	9.8	1.2	876	4.72	32	.17
2	170	1.7	13.2	1.05	178	1.78	16	.16
3	124	.15	13.6	1.09	135	.16	35	.04
4	153	1.84	13.2	1.05	161	1.93	14	.17
5	139	1.88	13.2	1.05	146	1.97	7	.09
6	153	1.55	13.3	1.05	161	1.63	14	.15
7	179	4.04	12	1.06	190	4.28	54	1.21
8	168	2.17	13.1	1.05	176	2.28	16	.2
9	5547	3.94	4.8	1.22	6767	4.81	142	.1

TOTALS: HCWTD = 330 COWTD 2.29

AVERAGE COLD CYCLE CONCENTRATION HC= 337.5 CO= 2.265

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	558	4.38	9.9	1.19	664	5.21	24	.19
2	210	1.73	13.2	1.05	220	1.82	20	.16
3	134	.2	13.6	1.08	145	.22	37	.06
4	153	1.71	13.2	1.06	162	1.81	14	.16
5	144	1.95	13.1	1.05	151	2.05	7	.1
6	152	1.47	13.3	1.06	161	1.56	14	.14
7	185	3.86	12	1.06	196	4.09	55	1.16
8	178	2.37	13	1.04	185	2.46	16	.22
9	5466	3.83	4.8	1.23	6723	4.71	141	.1

TOTALS: HCWTD = 328 COWTD 2.29

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	558	4.38	9.9	1.19	664	5.21	24	.19
2	172	1.88	13.1	1.06	182	1.99	16	.18
3	129	.19	13.5	1.09	141	.21	36	.05
4	155	1.79	13.1	1.06	164	1.9	15	.17
5	143	1.99	13	1.06	152	2.11	7	.1
6	148	1.53	13.1	1.07	158	1.64	14	.15
7	181	4.04	11.8	1.07	194	4.32	55	1.22
8	169	2.19	12.8	1.07	181	2.34	16	.21
9	5272	3.8	4.9	1.24	6537	4.71	137	.1

TOTALS: HCWTD = 320 COWTD 2.37

AVERAGE HOT CYCLE CONCENTRATION HC= 324 CO= 2.33

IX-49

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 328.725 PPM
CARBON MONOXIDE 2.30725 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 313-5

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	412	2.52	12.2	1.08	445	2.72	16	.1
2	250	.22	13.1	1.11	277	.24	25	.02
3	175	.1	12.7	1.16	203	.12	52	.03
4	182	.22	13.3	1.1	200	.24	18	.02
5	148	.32	13.2	1.11	164	.36	8	.02
6	175	.23	13.3	1.1	192	.25	17	.02
7	191	3.52	12	1.08	206	3.8	58	1.08
8	184	.55	13.5	1.07	197	.59	18	.05
9	7120	3.52	4.8	1.1	7832	3.87	164	.08

TOTALS: HCWTD = 376 COWTD 1.42

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	412	2.52	12.2	1.08	445	2.72	16	.1
2	180	.29	13.2	1.11	200	.32	18	.03
3	142	.12	12.9	1.14	162	.14	42	.04
4	158	.24	13.3	1.1	174	.26	15	.02
5	135	.29	13.2	1.11	150	.32	7	.02
6	163	.26	13.3	1.1	179	.29	16	.03
7	183	3.63	11.9	1.08	198	3.92	56	1.11
8	164	.52	13.7	1.06	174	.55	15	.05
9	6956	3.54	4.9	1.1	7652	3.89	161	.08

TOTALS: HCWTD = 346 COWTD 1.48

AVERAGE COLD CYCLE CONCENTRATION HC= 361 CO= 1.45

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	516	4.6	10.9	1.09	562	5.01	20	.18
2	185	.38	13.3	1.1	203	.42	18	.04
3	140	.12	12.9	1.15	161	.14	41	.04
4	155	.27	13.3	1.1	170	.3	15	.03
5	135	.32	13.2	1.11	150	.36	7	.02
6	156	.23	13.3	1.11	173	.26	15	.02
7	182	3.53	11.8	1.09	198	3.85	56	1.09
8	158	.46	13.3	1.1	174	.51	15	.05
9	6847	3.42	5	1.11	7600	3.8	160	.08

TOTALS: HCWTD = 347 COWTD 1.55

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	516	4.6	10.9	1.09	562	5.01	20	.13
2	205	.34	13.3	1.1	225	.37	20	.03
3	147	.13	12.9	1.14	168	.15	43	.04
4	160	.28	13.3	1.1	176	.31	16	.03
5	132	.36	13.2	1.11	147	.4	7	.02
6	161	.26	13.3	1.1	177	.29	16	.03
7	186	3.6	11.8	1.09	203	3.92	57	1.11
8	158	.46	13.4	1.09	172	.5	15	.04
9	6994	3.34	4.9	1.11	7763	3.71	163	.08

TOTALS: HCWTD = 357 COWTD 1.56

AVERAGE HOT CYCLE CONCENTRATION HC= 352 CO= 1.555

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 355.15 PPM

CARBON MONOXIDE 1.51325 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 313-6

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	529	4.28	11.5	1.06	561	4.54	20	.16
2	264	.22	13.5	1.08	285	.24	25	.02
3	179	.13	13	1.13	202	.15	52	.04
4	181	.2	13.6	1.08	195	.22	17	.02
5	154	.33	13.6	1.08	166	.36	8	.02
6	170	.2	13.6	1.08	184	.22	16	.02
7	188	3.5	12.3	1.05	197	3.67	56	1.04
8	175	.6	13.8	1.05	184	.63	16	.06
9	6306	3.68	5	1.14	7189	4.2	151	.09

TOTALS: HCWTD = 361 COWTD 1.47

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	529	4.28	11.5	1.06	561	4.54	24	.16
2	175	.34	13.5	1.08	189	.37	17	.03
3	138	.13	13.1	1.13	156	.15	40	.04
4	152	.23	13.6	1.08	164	.25	15	.02
5	132	.34	13.5	1.09	144	.37	7	.02
6	151	.22	13.6	1.08	163	.24	15	.02
7	172	3.57	12.2	1.06	182	3.78	52	1.07
8	158	.42	13.8	1.06	167	.45	15	.04
9	5863	3.46	5.3	1.16	6801	4.01	143	.08

TOTALS: HCWTD = 324 COWTD 1.48

AVERAGE COLD CYCLE CONCENTRATION HC= 342.5 CO= 1.475

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	501	4.61	11.3	1.06	531	4.89	19	.18
2	158	.27	13.5	1.09	172	.29	15	.03
3	133	.13	13.2	1.12	149	.15	38	.04
4	142	.23	13.6	1.08	153	.25	14	.02
5	116	.29	13.5	1.09	126	.32	6	.02
6	144	.22	13.7	1.07	154	.24	14	.02
7	172	3.54	12.2	1.06	182	3.75	52	1.06
8	140	.36	13.6	1.08	151	.39	13	.03
9	4912	3.19	4.8	1.33	6533	4.24	137	.09

TOTALS: HCWTD = 308 COWTD 1.49

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	501	4.61	11.3	1.06	531	4.89	19	.18
2	144	.37	13	1.13	163	.42	15	.04
3	124	.13	13	1.14	141	.15	36	.04
4	138	.24	13.5	1.09	150	.26	13	.02
5	113	.35	13.3	1.1	124	.38	6	.02
6	138	.24	13.5	1.09	150	.26	13	.02
7	165	3.73	11.3	1.08	178	4.03	50	1.14
8	143	.38	13.6	1.08	154	.41	14	.04
9	5875	3.48	5.3	1.16	6815	4.04	143	.08

TOTALS: HCWTD = 349 COWTD 1.58

AVERAGE HOT CYCLE CONCENTRATION HC= 343.5 CO= 1.535

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 329.4 PPM
CARBON MONOXIDE 1.514 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 318-4

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	563	3.86	7.7	1.47	828	5.67	30	.2
2	179	2.84	12.4	1.07	192	3.04	17	.27
3	98	1.18	13.8	1.04	102	1.23	26	.32
4	98	3.23	12.6	1.05	103	3.39	9	.3
5	97	3.74	12.1	1.07	104	4	5	.19
6	91	3.02	12.6	1.06	96	3.2	9	.28
7	89	4.94	11.4	1.07	95	5.29	27	1.5
8	90	3.56	12.4	1.05	94	3.74	8	.33
9	3971	3.09	4.9	1.44	5718	4.45	129	.09

TOTALS: HCWTD = 251 COWTD 3.48

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	563	3.86	7.7	1.47	828	5.67	30	.2
2	98	3.01	12.6	1.06	104	3.19	9	.28
3	63	1.27	13.8	1.03	65	1.31	17	.34
4	73	3.13	12.7	1.05	77	3.29	7	.29
5	73	3.78	12.1	1.07	78	4.04	4	.19
6	74	3.07	12.7	1.05	78	3.22	7	.29
7	72	5.06	11.4	1.07	77	5.41	22	1.53
8	77	3.59	12.4	1.05	81	3.77	7	.34
9	3775	3.46	4.9	1.44	5436	4.98	114	.1

TOTALS: HCWTD = 217 COWTD 3.56

AVERAGE COLD CYCLE CONCENTRATION HC= 234 CO= 3.52

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	223	4.24	8.4	1.4	312	5.94	11	.21
2	87	3.09	12.5	1.06	92	3.28	8	.29
3	58	1.36	13.6	1.05	61	1.43	16	.37
4	68	3.23	12.5	1.06	72	3.42	6	.3
5	70	4.06	11.9	1.07	75	4.34	4	.2
6	69	3.14	12.5	1.06	73	3.33	6	.3
7	70	5.05	11.4	1.07	75	5.4	21	1.53
8	72	3.56	12.3	1.06	76	3.77	7	.34
9	3704	3.6	4.8	1.46	5408	5.26	114	.11

TOTALS: HCWTD = 193 COWTD 3.65

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	223	4.24	8.4	1.4	312	5.94	11	.21
2	83	3.05	12.4	1.07	89	3.26	8	.29
3	57	1.39	13.5	1.05	60	1.46	15	.36
4	66	3.05	12.5	1.06	70	3.23	6	.29
5	67	3.73	11.9	1.08	72	4.08	3	.19
6	67	3.13	12.4	1.07	72	3.35	6	.3
7	68	5.01	11.2	1.09	74	5.46	21	1.55
8	69	3.45	12.3	1.06	73	3.66	6	.33
9	3806	3.43	4.8	1.45	5519	5.05	116	.11

TOTALS: HCWTD = 192 COWTD 3.65

AVERAGE HOT CYCLE CONCENTRATION HC= 192.5 CO= 3.65

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 217.925 PPM
CARBON MONOXIDE 3.5945 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 320-1

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1232	8.1	5.7	1.37	1688	11.1	61	.4
2	209	1.53	12.9	1.08	226	1.65	20	.15
3	174	1.03	13.3	1.07	186	1.1	48	.28
4	178	1.51	13	1.08	192	1.63	17	.15
5	166	2.16	12.6	1.03	179	2.33	8	.11
6	164	1.49	13.1	1.07	175	1.59	16	.14
7	177	3.8	11.9	1.07	189	4.07	53	1.15
8	173	1.87	13	1.06	183	1.98	16	.18
9	7361	3.77	3.1	1.21	8907	4.56	187	.1

TOTALS: HCWTD = 426 COWTD 2.66

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1232	8.1	5.7	1.37	1688	11.1	61	.4
2	172	1.47	13.1	1.07	184	1.57	16	.14
3	152	1.07	13.3	1.07	163	1.14	42	.29
4	163	1.6	13.1	1.07	174	1.71	15	.15
5	162	2.48	12.6	1.07	173	2.65	8	.12
6	159	1.59	13.2	1.06	169	1.69	15	.15
7	160	3.83	12	1.07	171	4.1	48	1.16
8	175	1.98	13	1.06	185	2.1	16	.19
9	7425	3.98	3.1	1.2	8910	4.78	187	.1

TOTALS: HCWTD = 408 COWTD 2.7

AVERAGE COLD CYCLE CONCENTRATION HC= 417 CO= 2.68

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1374	8.61	5.8	1.31	1800	11.28	65	.41
2	172	1.61	12.9	1.08	186	1.74	17	.15
3	152	1.15	13.3	1.07	163	1.23	42	.32
4	163	1.64	13.2	1.06	173	1.74	15	.15
5	161	2.49	12.6	1.07	172	2.66	8	.13
6	161	1.64	13.2	1.06	171	1.74	15	.15
7	153	3.89	12	1.06	162	4.12	46	1.17
8	176	2.04	13.1	1.05	185	2.14	16	.19
9	7528	4.51	3.7	1.11	8356	5.01	175	.11

TOTALS: HCWTD = 399 COWTD 2.78

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1374	8.61	5.8	1.31	1800	11.28	65	.41
2	174	1.59	13.1	1.07	186	1.7	17	.15
3	152	1.12	13.4	1.06	161	1.19	41	.31
4	165	1.64	13.1	1.06	175	1.74	16	.15
5	162	2.27	12.7	1.07	173	2.43	8	.11
6	161	1.58	13.2	1.06	171	1.67	15	.15
7	162	3.88	12	1.06	172	4.11	49	1.16
8	171	1.89	13	1.06	181	2	16	.18
9	7361	4.46	3.6	1.14	8392	5.08	176	.11

TOTALS: HCWTD = 403 COWTD 2.73

AVERAGE HOT CYCLE CONCENTRATION HC= 401 CO= 2.755

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 320-2

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	970	8.16	5.8	1.38	1339	11.26	48	.41
2	261	1.29	13.1	1.07	279	1.38	25	.12
3	203	.93	13.4	1.07	217	1	56	.26
4	200	1.35	13.3	1.06	212	1.43	19	.13
5	189	2.36	12.7	1.07	202	2.53	9	.12
6	188	1.39	13.3	1.06	199	1.47	18	.13
7	181	3.02	12.7	1.04	188	3.14	53	.89
8	183	1.67	13.2	1.06	194	1.77	17	.16
9	8405	3.69	2.9	1.14	9582	4.21	201	.09

TOTALS: HCWTD = 446 COWTD 2.31

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	970	8.16	5.8	1.38	1339	11.26	48	.41
2	184	1.48	13.1	1.07	197	1.58	18	.14
3	166	1.07	13.4	1.06	176	1.13	45	.29
4	173	1.46	13.3	1.06	183	1.55	16	.14
5	161	2.27	12.8	1.06	171	2.41	8	.11
6	160	1.46	13.3	1.06	170	1.55	15	.14
7	156	3.05	12.7	1.04	162	3.17	46	.9
8	165	1.67	13.3	1.05	173	1.75	15	.16
9	7567	3.66	2.9	1.22	9232	4.47	194	.09

TOTALS: HCWTD = 405 COWTD 2.38

AVERAGE COLD CYCLE CONCENTRATION HC= 425.5 CO= 2.345

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1664	8.64	5.7	1.24	2125	11.[illegible]	76	.4
2	175	1.53	13.1	1.07	187	1.64	17	.15
3	147	1.07	13.4	1.07	157	1.14	[illegible]	.09
4	153	1.58	13.3	1.06	163	1.68	15	.15
5	155	2.3	12.8	1.06	165	2.44	8	.11
6	153	1.52	13.3	1.06	163	1.62	15	.15
7	152	3.1	12.5	1.06	162	3.3	46	.93
8	163	1.77	13.1	1.06	173	1.88	15	.17
9	7170	3.78	2.7	1.28	9178	4.76	193	.1

TOTALS: HCWTD = 425 COWTD 2.45

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1663	8.64	5.7	1.24	2125	11.[illegible]	76	.4
2	[illegible]	1.52	13.1	1.07	213	1.63	19	.15
3	139	1.03	13.[illegible]	1.[illegible]	147	1.[illegible]	51	.[illegible]
4	[illegible]	1.47	13.3	1.[illegible]	[illegible]	1.56	14	.[illegible]
5	171	[illegible]	13.1	[illegible]	[illegible]	2.[illegible]	5	.[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	184	1.[illegible]	[illegible]	[illegible]
7	1[illegible]	[illegible]	[illegible]	1.05	172	3.3	49	.93
8	163	1.75	13.1	1.06	178	1.85	16	.16
9	7557	3.78	3	1.2	9[illegible]	4.5[illegible]	191	.1

TOTALS: [illegible] = [illegible] COWTD 2.39

AVERAGE [illegible] CYCLE [illegible] HC= [illegible] CO= [illegible]

FOUR CYCLE [illegible]

CO [illegible]

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 321-3

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	461	3.18	7.5	1.57	724	4.99	26	.18
2	160	.42	12.9	1.13	181	.47	16	.04
3	124	.11	12.7	1.16	144	.13	37	.03
4	125	.62	13.3	1.09	136	.68	12	.06
5	132	2.2	12.2	1.12	148	2.46	7	.12
6	113	.54	13.3	1.1	124	.59	11	.05
7	169	3.7	11.7	1.09	184	4.03	52	1.14
8	126	.8	13.3	1.08	136	.86	12	.08
9	4243	2.44	3.2	1.73	7340	4.22	154	.09

TOTALS: HCWTD = 327 COWTD 1.79

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	461	3.18	7.5	1.57	724	4.99	26	.18
2	129	.48	13.2	1.11	143	.53	13	.05
3	108	.12	12.9	1.15	124	.14	32	.04
4	120	.77	13.2	1.09	131	.84	12	.07
5	129	1.03	13.1	1.09	141	1.12	7	.05
6	122	.56	13.3	1.09	133	.61	12	.05
7	175	3.87	11.6	1.09	191	4.22	54	1.19
8	130	.99	13.3	1.08	140	1.07	12	.1
9	4159	2.52	3.3	1.72	7153	4.33	150	.09

TOTALS: HCWTD = 318 COWTD 1.82

AVERAGE COLD CYCLE CONCENTRATION HC= 322.5 CO= 1.805

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	498	3.48	8.2	1.44	717	5.01	26	.18
2	127	.54	13.2	1.1	140	.59	12	.05
3	104	.11	12.8	1.16	121	.13	31	.03
4	121	.71	13.2	1.1	133	.78	12	.07
5	131	2.31	12.1	1.12	147	2.59	7	.12
6	116	.62	13.2	1.1	128	.68	11	.06
7	168	3.67	11.7	1.09	183	4	52	1.13
8	132	.97	13.2	1.09	144	1.06	13	.09
9	3755	2.82	3.6	1.71	6421	4.82	135	.1

TOTALS: HCWTD = 299 COWTD 1.83

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	498	3.48	8.2	1.44	717	5.01	26	.18
2	122	.57	13.2	1.1	134	.63	12	.06
3	104	.12	12.9	1.15	120	.14	31	.04
4	116	.77	13.3	1.09	126	.84	11	.07
5	126	2.44	12.1	1.12	141	2.73	7	.13
6	113	.55	13.3	1.1	124	.6	11	.05
7	147	3.41	11.8	1.1	162	3.75	46	1.06
8	121	.97	13.2	1.09	132	1.06	12	.09
9	3796	2.75	3.5	1.73	6567	4.76	138	.1

TOTALS: HCWTD = 294 COWTD 1.78

AVERAGE HOT CYCLE CONCENTRATION HC= 294.5 CO= 1.805

IX-55

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 305.6 PPM

CARBON MONOXIDE 1.805 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 321-4

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	674	2.7	7.2	1.63	1099	4.4	40	.16
2	176	.34	12.9	1.13	199	.38	18	.03
3	125	.1	12.8	1.16	145	.12	37	.03
4	130	.6	13.3	1.09	142	.65	13	.06
5	140	2.04	12.4	1.11	155	2.26	7	.11
6	121	.49	13.3	1.1	133	.54	12	.05
7	176	4.01	11.6	1.09	192	4.37	54	1.24
8	130	.69	13.4	1.08	140	.75	12	.07
9	4475	2.68	3.3	1.65	7384	4.42	155	.09

TOTALS: HCWTD = 348 COWTD 1.84

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	674	2.7	7.2	1.63	1099	4.4	40	.16
2	242	.34	13.3	1.09	264	.37	23	.03
3	147	.09	12.9	1.15	169	.1	43	.03
4	145	.58	13.4	1.08	157	.63	14	.06
5	149	2.02	12.5	1.1	164	2.22	8	.1
6	132	.46	13.4	1.09	144	.5	13	.04
7	174	3.69	11.7	1.09	190	4.02	54	1.14
8	135	.71	13.4	1.08	146	.77	13	.07
9	4085	2.93	3.7	1.62	6618	4.75	139	.1

TOTALS: HCWTD = 347 COWTD 1.73

AVERAGE COLD CYCLE CONCENTRATION HC= 347.5 CO= 1.785

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	456	3.38	8.4	1.42	648	4.8	23	.17
2	134	.48	13.2	1.11	149	.53	13	.05
3	106	.1	12.8	1.16	123	.12	32	.03
4	118	.57	13.3	1.09	129	.62	11	.06
5	135	2.27	12.2	1.11	150	2.52	7	.12
6	117	.49	13.3	1.1	129	.54	11	.05
7	159	3.82	11.6	1.1	175	4.2	50	1.19
8	120	.87	13.3	1.08	130	.94	12	.08
9	4106	2.79	3.7	1.63	6693	4.55	141	.1

TOTALS: HCWTD = 300 COWTD 1.85

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	456	3.38	8.4	1.42	648	4.8	23	.17
2	123	.56	13.3	1.09	134	.61	12	.05
3	103	.09	12.9	1.15	118	.1	30	.03
4	111	.62	13.4	1.09	121	.68	11	.06
5	126	2.31	12.3	1.1	139	2.54	7	.12
6	111	.52	13.4	1.09	121	.57	11	.05
7	159	3.7	11.7	1.09	173	4.03	49	1.14
8	125	.87	13.3	1.08	135	.94	12	.08
9	4169	2.73	3.7	1.62	6754	4.42	142	.09

IX-56 TOTALS: HCWTD = 297 COWTD 1.79

AVERAGE HOT CYCLE CONCENTRATION HC= 298.5 CO= 1.82

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 315.65 PPM

CARBON MONOXIDE 1.80775 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 322-3

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	724	5.81	10.2	1.08	782	6.27	28	.23
2	333	1.79	12.8	1.07	356	1.92	32	.17
3	261	.51	13.3	1.09	284	.56	73	.14
4	257	2.06	12.7	1.07	275	2.2	24	.2
5	216	2.19	12.9	1.06	229	2.32	11	.11
6	252	2	12.7	1.08	272	2.16	24	.19
7	261	2.95	12.4	1.06	277	3.13	78	.89
8	249	2.37	12.6	1.07	266	2.54	24	.23
9	6760	3.8	3.9	1.19	8044	4.52	169	.09

TOTALS: HCWTD = 463 COWTD 2.25

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	724	5.81	10.2	1.08	782	6.27	28	.23
2	275	2.39	12.5	1.07	294	2.56	26	.23
3	229	.78	13.4	1.07	245	.83	63	.21
4	233	2.14	12.7	1.07	249	2.29	22	.2
5	203	2.32	12.8	1.06	215	2.46	10	.12
6	234	2.15	12.7	1.07	250	2.3	22	.2
7	228	3.22	12.2	1.07	244	3.45	69	.98
8	236	2.33	12.7	1.06	250	2.47	22	.22
9	6748	3.93	4	1.18	7963	4.64	167	.1

TOTALS: HCWTD = 429 COWTD 2.49

AVERAGE COLD CYCLE CONCENTRATION HC= 446 CO= 2.37

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	844	6.62	9.7	1.08	912	7.15	33	.26
2	267	2.48	12.5	1.07	286	2.65	25	.24
3	222	.84	13.5	1.06	235	.89	60	.23
4	226	2.16	12.7	1.07	242	2.31	22	.21
5	198	2.27	12.8	1.06	210	2.41	10	.11
6	225	2.17	12.8	1.06	238	2.3	21	.2
7	223	3.2	12.2	1.07	239	3.42	68	.97
8	227	2.35	12.7	1.06	241	2.49	21	.22
9	6735	3.84	4.1	1.18	7947	4.53	167	.1

TOTALS: HCWTD = 427 COWTD 2.54

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	844	6.62	9.7	1.08	912	7.15	33	.26
2	257	2.49	12.5	1.07	275	2.66	24	.24
3	212	.86	13.4	1.07	227	.92	58	.24
4	220	2.19	12.7	1.07	235	2.34	21	.21
5	189	2.47	12.7	1.06	200	2.62	9	.12
6	225	2.16	12.7	1.07	241	2.31	21	.21
7	221	3.2	12.4	1.05	232	3.36	66	.95
8	220	2.37	12.7	1.06	233	2.51	21	.22
9	6760	3.91	4.2	1.16	7842	4.54	165	.1

TOTALS: HCWTD = 418 COWTD 2.55

AVERAGE HOT CYCLE CONCENTRATION HC= 422.5 CO= 2.545

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 430.725 PPM

CARBON MONOXIDE 2.48375 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 322-4

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	823	6.02	10.2	1.07	881	6.44	32	.23
2	339	1.97	12.8	1.06	359	2.09	32	.19
3	259	.52	13.4	1.08	280	.56	22	.14
4	256	1.91	12.8	1.07	274	2.04	24	.18
5	213	1.88	12.9	1.07	228	2.01	11	.09
6	245	1.81	12.9	1.07	262	1.94	23	.17
7	237	2.91	12.4	1.06	251	3.08	71	.87
8	239	2.23	12.7	1.07	256	2.39	23	.21
9	7158	3.78	3.9	1.16	8303	4.38	174	.09

TOTALS: HCWTD = 462 COWTD 2.17

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	823	6.02	10.2	1.07	881	6.44	32	.23
2	268	2.34	12.6	1.07	287	2.5	26	.22
3	222	.67	13.4	1.07	238	.72	61	.19
4	221	2.09	12.7	1.07	236	2.24	21	.2
5	192	2.25	12.7	1.07	205	2.41	10	.11
6	228	2.06	12.7	1.07	244	2.2	22	.2
7	225	3.03	12.3	1.07	241	3.24	68	.92
8	222	2.39	12.7	1.06	235	2.53	21	.23
9	7170	3.91	3.9	1.15	8245	4.5	173	.09

TOTALS: HCWTD = 434 COWTD 2.39

AVERAGE COLD CYCLE CONCENTRATION HC= 448 CO= 2.28

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	783	6.38	9.9	1.08	846	6.89	30	.25
2	256	2.44	12.6	1.07	274	2.61	24	.23
3	217	.79	13.3	1.08	234	.85	60	.22
4	218	2.2	12.7	1.07	233	2.35	21	.21
5	190	2.27	12.8	1.06	201	2.41	9	.11
6	218	2.17	12.7	1.07	233	2.32	21	.21
7	217	3.14	12.2	1.07	232	3.36	66	.95
8	218	2.28	12.7	1.07	233	2.44	21	.22
9	7196	3.85	4.1	1.13	8131	4.35	171	.09

TOTALS: HCWTD = 423 COWTD 2.49

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	783	6.38	9.9	1.08	846	6.89	30	.25
2	252	2.44	12.6	1.07	270	2.61	24	.23
3	209	.84	13.3	1.08	226	.91	58	.23
4	217	2.23	12.7	1.07	232	2.39	21	.21
5	189	2.23	12.7	1.07	202	2.39	9	.11
6	214	2.23	12.7	1.07	229	2.39	20	.21
7	217	3.21	12.2	1.07	232	3.43	66	.97
8	216	2.33	12.7	1.07	231	2.49	21	.22
9	7196	3.84	4.1	1.13	8131	4.34	171	.09

TOTALS: HCWTD = 420 COWTD 2.52

AVERAGE HOT CYCLE CONCENTRATION HC= 421.5 CO= 2.505

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 430.775 PPM

CARBON MONOXIDE 2.42625 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 324-4

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	965	8.57	7.5	1.18	1139	10.11	41	.36
2	173	.32	13.7	1.07	185	.34	16	.03
3	134	.41	13.5	1.08	145	.44	37	.11
4	120	.13	13.3	1.11	133	.14	12	.01
5	122	.53	13.2	1.1	134	.58	6	.03
6	109	.15	13.3	1.11	121	.17	11	.02
7	166	5.87	10.7	1.09	181	6.4	51	1.81
8	98	.22	13.2	1.12	110	.25	10	.02
9	4746	2.89	6.4	1.19	5648	3.44	119	.07

TOTALS: HCWTD = 303 COWTD 2.46

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	965	8.57	7.5	1.18	1139	10.11	41	.36
2	107	.17	13.4	1.1	118	.19	11	.02
3	89	.48	13.4	1.09	97	.52	25	.13
4	79	.15	13.2	1.12	88	.17	8	.02
5	82	.6	13.1	1.11	91	.67	4	.03
6	74	.15	13.2	1.12	83	.17	7	.02
7	147	5.91	10.5	1.1	162	6.5	46	1.84
8	75	.19	13.5	1.1	82	.21	7	.02
9	4432	2.95	6.5	1.21	5363	3.57	113	.07

TOTALS: HCWTD = 262 COWTD 2.51

AVERAGE COLD CYCLE CONCENTRATION HC= 282.5 CO= 2.485

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	997	6.95	7.9	1.21	1206	8.41	43	.3
2	98	.19	13.4	1.1	108	.21	10	.02
3	77	.44	13.3	1.1	85	.48	22	.12
4	68	.15	13.2	1.12	76	.17	7	.02
5	67	.58	13.1	1.11	74	.64	3	.03
6	63	.17	13.2	1.12	71	.19	6	.02
7	135	5.91	10.6	1.1	148	6.5	42	1.84
8	64	.2	13.1	1.13	72	.23	6	.02
9	4190	3.1	6.8	1.2	5028	3.72	106	.08

TOTALS: HCWTD = 245 COWTD 2.45

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	997	6.95	7.9	1.21	1206	8.41	43	.3
2	84	.17	13.4	1.11	93	.19	8	.02
3	64	.37	13.4	1.1	70	.41	18	.11
4	61	.14	13.2	1.13	69	.16	6	.01
5	61	.55	13.1	1.12	68	.62	3	.03
6	61	.14	13.2	1.13	69	.16	6	.01
7	134	5.91	10.6	1.1	147	6.5	42	1.84
8	62	.19	13	1.14	71	.22	6	.02
9	4485	2.95	6.6	1.19	5337	3.51	112	.07

TOTALS: HCWTD = 244 COWTD 2.41

AVERAGE HOT CYCLE CONCENTRATION HC= 244.5 CO= 2.43

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 257.8 PPM

CARBON MONOXIDE 2.44925 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 324-5

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1474	7.46	7.2	1.21	1784		9.03	64 .33
2	172	.19	13.6	1.08	186	.21	17	.02
3	117	.45	13.5	1.08	126	.49	32	.13
4	100	.16	13.2	1.12	112	.18	10	.02
5	92	.71	13.1	1.11	102	.79	5	.04
6	87	.17	13.3	1.11	97	.19	9	.02
7	151	5.88	10.7	1.09	165	6.41	47	1.81
8	82	.26	13.1	1.13	93	.29	8	.03
9	4254	2.84	6.8	1.2	5105		3.41	107 .07

TOTALS: HCWTD = 299 C0WTD 2.47

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1474	7.46	7.2	1.21	1784		9.03	64 .33
2	89	.19	13.4	1.1	98	.21	9	.02
3	71	.4	13.3	1.11	79	.44	20	.11
4	64	.15	13	1.14	73	.17	6	.02
5	69	.62	12.9	1.13	78	.7	4	.03
6	63	.15	13.2	1.12	71	.17	6	.02
7	136	5.74	10.7	1.09	148	6.26	42	1.77
8	62	.21	13	1.14	71	.24	6	.02
9	4410	3.01	6.8	1.18	5204		3.55	109 .07

TOTALS: HCWTD = 266 C0WTD 2.39

AVERAGE COLD CYCLE CONCENTRATION HC= 282.5 C0= 2.43

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1416	6.95	7.5	1.21	1713		8.41	62 .3
2	80	.15	13.3	1.11	89	.17	8	.02
3	66	.35	13.2	1.12	74	.39	19	.1
4	62	.14	13	1.14	71	.16	6	.01
5	59	.6	12.9	1.13	67	.68	3	.03
6	58	.14	13.1	1.13	66	.16	6	.01
7	132	5.81	10.7	1.09	144	6.33	41	1.79
8	61	.21	13	1.14	70	.24	6	.02
9	4254	3.09	6.8	1.19	5062		3.68	106 .08

TOTALS: HCWTD = 257 C0WTD 2.36

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1416	6.95	7.5	1.21	1713		8.41	62 .3
2	73	.14	13.2	1.12	82	.16	7	.01
3	63	.39	13.2	1.11	70	.43	18	.11
4	59	.16	13	1.14	67	.18	6	.02
5	61	.7	13	1.12	68	.78	3	.04
6	58	.14	13.1	1.13	66	.16	6	.01
7	133	5.88	10.7	1.09	145	6.41	41	1.81
8	60	.24	13	1.14	68	.27	6	.02
9	4735	3.06	6.4	1.18	5587		3.61	117 .08

TOTALS: HCWTD = 266 C0WTD 2.4

AVERAGE HOT CYCLE CONCENTRATION HC= 261.5 C0= 2.38

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 263.85 PPM

CARBON MONOXIDE 2.3975 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 324-4

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	965	8.57	7.5	1.18	1139	10.11	41	.36
2	173	.32	13.7	1.07	185	.34	16	.03
3	134	.41	13.5	1.08	145	.44	37	.11
4	120	.13	13.3	1.11	133	.14	12	.01
5	122	.53	13.2	1.1	134	.58	6	.03
6	109	.15	13.3	1.11	121	.17	11	.02
7	166	5.87	10.7	1.09	181	6.4	51	1.81
8	98	.22	13.2	1.12	110	.25	10	.02
9	4746	2.89	6.4	1.19	5648	3.44	119	.07

TOTALS: HCWTD = 303 COWTD 2.46

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	965	8.57	7.5	1.18	1139	10.11	41	.36
2	107	.17	13.4	1.1	118	.19	11	.02
3	89	.48	13.4	1.09	97	.52	25	.13
4	79	.15	13.2	1.12	88	.17	8	.02
5	82	.6	13.1	1.11	91	.67	4	.03
6	74	.15	13.2	1.12	83	.17	7	.02
7	147	5.91	10.5	1.1	162	6.5	46	1.84
8	75	.19	13.5	1.1	82	.21	7	.02
9	4432	2.95	6.5	1.21	5363	3.57	113	.07

TOTALS: HCWTD = 262 COWTD 2.51

AVERAGE COLD CYCLE CONCENTRATION HC= 282.5 CO= 2.485

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	997	6.95	7.9	1.21	1206	8.41	43	.3
2	98	.19	13.4	1.1	108	.21	10	.02
3	77	.44	13.3	1.1	85	.48	22	.12
4	68	.15	13.2	1.12	76	.17	7	.02
5	67	.58	13.1	1.11	74	.64	3	.03
6	63	.17	13.2	1.12	71	.19	6	.02
7	135	5.91	10.6	1.1	148	6.5	42	1.84
8	64	.2	13.1	1.13	72	.23	6	.02
9	4190	3.1	6.8	1.2	5028	3.72	106	.08

TOTALS: HCWTD = 245 COWTD 2.45

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	997	6.95	7.9	1.21	1206	8.41	43	.3
2	84	.17	13.4	1.11	93	.19	8	.02
3	64	.37	13.4	1.1	70	.41	18	.11
4	61	.14	13.2	1.13	69	.16	6	.01
5	61	.55	13.1	1.12	68	.62	3	.03
6	61	.14	13.2	1.13	69	.16	6	.01
7	134	5.91	10.6	1.1	147	6.5	42	1.84
8	62	.19	13	1.14	71	.22	6	.02
9	4485	2.95	6.6	1.19	5337	3.51	112	.07

TOTALS: HCWTD = 244 COWTD 2.41

AVERAGE HOT CYCLE CONCENTRATION HC= 244.5 CO= 2.43

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 257.8 PPM

CARBON MONOXIDE 2.44925 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 324-5

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD	
1	1474	7.46	7.2	1.21	1784		9.03	64	.33
2	172	.19	13.6	1.08	186	.21	17	.02	
3	117	.45	13.5	1.08	126	.49	32	.13	
4	100	.16	13.2	1.12	112	.18	10	.02	
5	92	.71	13.1	1.11	102	.79	5	.04	
6	87	.17	13.3	1.11	97	.19	9	.02	
7	151	5.88	10.7	1.09	165	6.41	47	1.81	
8	82	.26	13.1	1.13	93	.29	8	.03	
9	4254	2.84	6.8	1.2	5105		3.41	107	.07

TOTALS: HCWTD = 299 C0WTD 2.47

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD	
1	1474	7.46	7.2	1.21	1784		9.03	64	.33
2	89	.19	13.4	1.1	98	.21	9	.02	
3	71	.4	13.3	1.11	79	.44	20	.11	
4	64	.15	13	1.14	73	.17	6	.02	
5	69	.62	12.9	1.13	78	.7	4	.03	
6	63	.15	13.2	1.12	71	.17	6	.02	
7	136	5.74	10.7	1.09	148	6.26	42	1.77	
8	62	.21	13	1.14	71	.24	6	.02	
9	4410	3.01	6.8	1.18	5204		3.55	109	.07

TOTALS: HCWTD = 266 C0WTD 2.39

AVERAGE COLD CYCLE CONCENTRATION HC= 282.5 C0= 2.43

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD	
1	1416	6.95	7.5	1.21	1713		8.41	62	.3
2	80	.15	13.3	1.11	89	.17	8	.02	
3	66	.35	13.2	1.12	74	.39	19	.1	
4	62	.14	13	1.14	71	.16	6	.01	
5	59	.6	12.9	1.13	67	.68	3	.03	
6	58	.14	13.1	1.13	66	.16	6	.01	
7	132	5.81	10.7	1.09	144	6.33	41	1.79	
8	61	.21	13	1.14	70	.24	6	.02	
9	4254	3.09	6.8	1.19	5062		3.68	106	.08

TOTALS: HCWTD = 257 C0WTD 2.36

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD	
1	1416	6.95	7.5	1.21	1713		8.41	62	.3
2	73	.14	13.2	1.12	82	.16	7	.01	
3	63	.39	13.2	1.11	70	.43	18	.11	
4	59	.16	13	1.14	67	.18	6	.02	
5	61	.7	13	1.12	68	.78	3	.04	
6	58	.14	13.1	1.13	66	.16	6	.01	
7	133	5.88	10.7	1.09	145	6.41	41	1.81	
8	60	.24	13	1.14	68	.27	6	.02	
9	4735	3.06	6.4	1.18	5587		3.61	117	.08

IX-12 TOTALS: HCWTD = 266 C0WTD 2.4

AVERAGE HOT CYCLE CONCENTRATION HC= 261.5 C0= 2.33

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 263.85 PPM

CARBON MONOXIDE 2.3975 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 325-3

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	648	6.94	9.3	1.12	726	7.77	26	.28
2	308	1.71	13	1.06	326	1.81	29	.16
3	246	1.39	13	1.08	266	1.5	68	.39
4	246	2.1	12.9	1.06	261	2.23	23	.2
5	237	2.56	12.7	1.06	251	2.71	12	.13
6	242	1.94	13	1.06	257	2.06	23	.18
7	267	5.13	10.8	1.1	294	5.64	83	1.6
8	246	2.52	12.7	1.06	261	2.67	23	.24
9	7798	3.59	4.9	1.03	8032	3.7	169	.08

TOTALS: HCWTD = 456 C0WTD 3.26

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	648	6.94	9.3	1.12	726	7.77	26	.28
2	268	1.93	13	1.05	281	2.03	25	.18
3	228	1.44	13	1.08	246	1.56	63	.4
4	232	2.1	12.8	1.07	248	2.25	22	.2
5	236	2.56	12.7	1.06	250	2.71	12	.13
6	242	2.1	12.8	1.06	257	2.23	23	.2
7	264	5.03	10.9	1.1	290	5.53	82	1.56
8	237	2.44	12.7	1.06	251	2.59	22	.23
9	7015	3.57	5.3	1.06	7436	3.78	156	.08

TOTALS: HCWTD = 431 C0WTD 3.26

AVERAGE COLD CYCLE CONCENTRATION HC= 443.5 C0= 3.26

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	470	5.38	10.8	1.07	503	5.76	18	.21
2	261	2.14	12.8	1.06	277	2.27	25	.2
3	223	1.42	13.1	1.07	239	1.52	61	.39
4	228	2.06	13	1.05	239	2.16	21	.19
5	229	2.61	12.7	1.05	240	2.74	11	.13
6	237	2.35	12.9	1.05	249	2.47	22	.22
7	256	5	10.9	1.1	282	5.5	80	1.56
8	237	2.1	12.8	1.06	251	2.23	22	.2
9	6404	3.74	5.5	1.09	6980	4.08	147	.09

TOTALS: HCWTD = 407 C0WTD 3.19

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	470	5.38	10.8	1.07	503	5.76	18	.21
2	246	1.94	12.8	1.07	263	2.08	23	.19
3	220	1.48	13	1.07	235	1.58	60	.41
4	228	2.06	12.9	1.06	242	2.18	22	.19
5	228	2.52	12.7	1.06	242	2.67	11	.13
6	235	2.35	12.9	1.05	247	2.47	22	.22
7	250	4.97	11	1.09	272	5.42	77	1.53
8	235	2.28	12.8	1.06	249	2.42	22	.22
9	6807	3.65	5.3	1.08	7352	3.94	154	.08

TOTALS: HCWTD = 409 C0WTD 3.18

AVERAGE HOT CYCLE CONCENTRATION HC= 408 C0= 3.185

IX-63

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON = 420.425 PPM

CARBON MONOXIDE = 3.21125 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 325-4

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	522	5.81	10.1	1.11	579	6.45	21	.23
2	294	1.79	13	1.06	312	1.9	28	.17
3	237	1.21	13.1	1.08	256	1.31	66	.34
4	241	1.98	12.9	1.06	255	2.1	23	.19
5	237	2.35	12.7	1.06	251	2.49	12	.2
6	242	1.92	12.9	1.06	257	2.04	23	.18
7	265	5.18	10.7	1.11	294	5.75	83	1.63
8	245	2.44	12.7	1.06	260	2.59	23	.23
9	7349	3.54	5	1.06	7790	3.75	164	.08

TOTALS: HCWTD = 443 COWTD 3.17

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	522	5.81	10.1	1.11	579	6.45	21	.23
2	265	1.91	12.9	1.06	281	2.02	25	.18
3	226	1.49	13.1	1.07	242	1.59	62	.41
4	228	2.14	12.9	1.06	242	2.27	22	.2
5	228	2.44	12.7	1.06	242	2.59	11	.12
6	237	2.1	12.9	1.06	251	2.23	22	.2
7	261	5.09	10.8	1.1	287	5.6	81	1.58
8	237	2.35	12.7	1.06	251	2.49	22	.22
9	6582	3.61	5.4	1.09	7174	3.93	151	.08

TOTALS: HCWTD = 417 COWTD 3.22

AVERAGE COLD CYCLE CONCENTRATION HC= 430 CO= 3.195

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	509	5.25	10.7	1.08	550	5.67	20	.2
2	256	1.97	12.9	1.06	271	2.09	24	.19
3	223	1.42	13	1.08	241	1.53	62	.39
4	228	1.94	12.9	1.06	242	2.06	22	.18
5	229	2.44	12.5	1.08	247	2.64	12	.12
6	237	1.98	12.9	1.06	251	2.1	22	.19
7	258	5.09	10.7	1.11	286	5.65	81	1.6
8	237	2.38	12.7	1.06	251	2.52	22	.22
9	6496	3.62	5.4	1.09	7081	3.95	149	.08

TOTALS: HCWTD = 414 COWTD 3.17

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	509	5.25	10.7	1.08	550	5.67	20	.2
2	378	1.87	13	1.05	397	1.96	35	.17
3	263	1.46	13.2	1.06	279	1.55	72	.4
4	258	2.06	12.9	1.06	273	2.18	24	.19
5	251	2.43	12.7	1.06	266	2.63	13	.12
6	251	2.04	12.8	1.07	269	2.18	24	.19
7	275	5.11	10.7	1.11	305	5.67	86	1.6
8	251	2.39	12.7	1.06	266	2.53	24	.23
9	7497	3.65	5.3	1.03	7722	3.76	162	.08

TOTALS: HCWTD = 460 COWTD 3.18

AVERAGE HOT CYCLE CONCENTRATION HC= 437 CO= 3.175

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 434.55 PPM

CARBON MONOXIDE 3.132 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 326-3

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	390	2.83	4.7	2.31	901	6.54	32	.24
2	245	1.69	12.7	1.09	267	1.84	24	.16
3	181	.45	13.6	1.07	194	.48	50	.12
4	204	2.32	12.6	1.07	218	2.48	19	.22
5	161	2.43	11.6	1.15	185	2.85	9	.13
6	195	2.16	12.6	1.08	211	2.33	19	.21
7	186	3.29	12.3	1.06	197	3.49	56	.99
8	200	2.97	12.4	1.06	212	3.15	19	.28
9	4934	2.55	3.2	1.59	7845	4.05	165	.09

TOTALS: HCWTD = 393 COWTD 2.44

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	390	2.83	4.7	2.31	901	6.54	32	.24
2	198	2.29	12.7	1.07	212	2.45	19	.22
3	164	.6	13.6	1.07	175	.64	45	.16
4	197	2.45	12.6	1.07	211	2.62	19	.23
5	162	2.58	11.9	1.12	181	2.89	9	.14
6	194	2.36	12.7	1.07	208	2.53	19	.23
7	182	3.28	12.4	1.05	191	3.44	54	.97
8	199	2.77	12.4	1.07	213	2.96	19	.26
9	4901	2.58	3.3	1.58	7744	4.08	163	.09

TOTALS: HCWTD = 379 COWTD 2.54

AVERAGE COLD CYCLE CONCENTRATION HC= 386 CO= 2.49

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	362	2.9	5.1	2.17	786	6.29	28	.23
2	277	2.27	12.7	1.06	294	2.41	26	.21
3	179	.62	13.6	1.06	190	.66	49	.17
4	199	2.42	12.6	1.07	213	2.59	19	.23
5	170	2.62	11.9	1.12	190	2.93	9	.14
6	201	2.43	12.6	1.07	215	2.65	19	.24
7	183	3.41	12.2	1.06	194	3.61	55	1.02
8	201	2.78	12.4	1.07	215	2.97	19	.26
9	4857	2.6	3.2	1.6	7771	4.16	163	.09

TOTALS: HCWTD = 387 COWTD 2.59

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	362	2.9	5.1	2.17	786	6.29	28	.23
2	205	2.35	12.6	1.07	219	2.51	19	.22
3	164	.66	13.6	1.06	174	.7	45	.18
4	197	2.52	12.6	1.07	211	2.7	19	.24
5	165	2.66	11.8	1.13	186	3.01	9	.14
6	201	2.5	12.6	1.07	215	2.67	19	.24
7	181	3.21	12.4	1.06	192	3.4	54	.96
8	200	2.86	12.4	1.07	214	3.06	19	.27
9	4834	2.52	3.2	1.61	7783	4.06	163	.09

TOTALS: HCWTD = 375 COWTD 2.57

AVERAGE HOT CYCLE CONCENTRATION HC= 381 CO= 2.58

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 382.75 PPM

CARBON MONOXIDE 2.5485 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 326-4

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	362	2.32	4.8	2.37	858	5.5	31	.2
2	253	2.2	12.4	1.09	276	2.4	25	.21
3	186	.57	13.5	1.07	199	.61	51	.16
4	207	2.33	12.5	1.08	224	2.52	20	.22
5	174	2.54	11.6	1.15	200	2.92	9	.14
6	207	2.27	12.5	1.08	224	2.45	20	.22
7	193	3.21	12.2	1.07	207	3.43	59	.97
8	203	2.64	12.3	1.09	221	2.88	20	.26
9	4346	2.41	3.3	1.69	7345	4.07	154	.09

TOTALS: HCWTD = 389 COWTD 2.47

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	362	2.32	4.8	2.37	858	5.5	31	.2
2	208	2.12	12.5	1.09	227	2.31	20	.21
3	168	.54	13.5	1.08	181	.58	47	.15
4	197	2.27	12.5	1.08	213	2.45	19	.22
5	163	2.42	11.8	1.14	186	2.76	9	.13
6	198	2.14	12.6	1.08	214	2.31	19	.21
7	181	3.19	12.2	1.07	194	3.41	55	.97
8	199	2.61	12.4	1.08	215	2.82	19	.25
9	4442	2.49	3.2	1.69	7507	4.21	158	.09

TOTALS: HCWTD = 377 COWTD 2.43

AVERAGE COLD CYCLE CONCENTRATION HC= 383 CO= 2.45

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	451	2.77	5	2.19	988	6.07	36	.22
2	201	2.2	12.6	1.08	217	2.38	19	.21
3	159	.54	13.5	1.08	172	.58	44	.15
4	190	2.34	12.5	1.08	205	2.53	18	.23
5	162	2.39	11.8	1.14	185	2.72	9	.13
6	191	2.27	12.6	1.08	206	2.45	18	.22
7	181	3.18	12.2	1.07	194	3.4	55	.96
8	196	2.68	12.7	1.05	206	2.81	18	.25
9	4604	2.52	3.2	1.65	7597	4.16	160	.09

TOTALS: HCWTD = 377 COWTD 2.46

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	451	2.77	5	2.19	988	6.07	36	.22
2	237	2.27	12.5	1.08	256	2.45	23	.22
3	171	.6	13.5	1.07	183	.64	47	.16
4	197	2.39	12.5	1.08	213	2.58	19	.23
5	163	2.48	11.8	1.14	186	2.83	9	.13
6	196	2.33	12.5	1.08	212	2.52	19	.22
7	181	3.21	12.2	1.07	194	3.43	55	.97
8	197	2.56	12.4	1.03	213	2.76	19	.25
9	4626	2.38	3.3	1.65	7633	3.93	160	.08

TOTALS: HCWTD = 387 COWTD 2.48

AVERAGE HOT CYCLE CONCENTRATION HC= 382 CO= 2.47

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 382.35 PPM

CARBON MONOXIDE 2.463 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 327-1

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	456	8.12	6.8	1.33	606	10.8	22	.39
2	133	.28	12.4	1.18	157	.33	14	.03
3	106	.52	12.6	1.16	123	.6	32	.15
4	91	.18	12.7	1.16	106	.21	9	.02
5	86	.38	12.7	1.16	100	.44	5	.02
6	89	.2	12.7	1.16	103	.23	9	.02
7	156	5.87	9.6	1.18	184	6.93	52	1.96
8	86	.22	12.7	1.16	100	.26	9	.02
9	7852	3.83	3.9	1.1	8637	4.21	181	.09

TOTALS: HCWTD = 333 COWTD 2.7

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	456	8.12	6.8	1.33	606	10.8	22	.39
2	93	.26	12.7	1.16	108	.3	10	.03
3	86	.67	12.5	1.16	100	.78	26	.2
4	82	.21	12.7	1.16	95	.24	8	.02
5	83	.58	12.7	1.15	95	.67	4	.03
6	86	.27	12.7	1.16	100	.31	9	.03
7	156	6.04	9.5	1.18	184	7.13	52	2.02
8	93	.31	12.7	1.16	108	.36	10	.03
9	8166	3.83	3.8	1.08	8819	4.14	185	.09

TOTALS: HCWTD = 326 COWTD 2.84

AVERAGE COLD CYCLE CONCENTRATION HC= 329.5 CO= 2.77

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	465	8.59	6.7	1.31	609	11.25	22	.4
2	101	.32	12.7	1.16	117	.37	10	.03
3	89	.62	12.6	1.15	102	.71	26	.18
4	79	.21	12.7	1.16	92	.24	8	.02
5	83	.59	12.7	1.15	95	.68	4	.03
6	88	.31	12.7	1.16	102	.36	9	.03
7	156	6.13	9.6	1.17	183	7.17	52	2.03
8	89	.27	12.8	1.15	102	.31	9	.03
9	8235	3.91	3.7	1.08	8948	4.22	188	.09

TOTALS: HCWTD = 328 COWTD 2.84

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	465	8.59	6.7	1.31	609	11.25	22	.4
2	136	.33	12.7	1.15	156	.38	14	.03
3	94	.62	12.6	1.15	103	.71	28	.18
4	85	.23	12.7	1.16	99	.27	9	.02
5	80	.4	12.8	1.15	92	.46	4	.02
6	89	.29	12.7	1.16	103	.34	9	.03
7	152	5.95	9.6	1.18	179	7.02	51	1.99
8	90	.28	12.8	1.15	103	.32	9	.03
9	8325	3.86	3.8	1.07	8908	4.13	187	.09

TOTALS: HCWTD = 333 COWTD 2.79

AVERAGE HOT CYCLE CONCENTRATION HC= 330.5 CO= 2.815

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 330.15 PPM

CARBON MONOXIDE 2.79925 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 327-2

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	627	8.24	6.4	1.35	846	11.12	30	.4
2	159	.26	12.7	1.15	183	.3	16	.03
3	109	.59	12.6	1.15	125	.68	32	.17
4	97	.23	12.7	1.16	113	.27	10	.02
5	99	.54	12.7	1.15	114	.62	5	.03
6	98	.26	12.7	1.16	114	.3	10	.03
7	161	6.18	9.6	1.17	188	7.23	53	2.05
8	98	.27	13.1	1.13	111	.31	10	.03
9	8512	3.94	3.8	1.05	8938	4.14	188	.09

TOTALS: HCWTD = 354 COWTD 2.85

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	627	8.24	6.4	1.35	846	11.12	30	.4
2	100	.29	12.7	1.16	116	.34	10	.03
3	90	.59	12.6	1.16	104	.68	27	.17
4	81	.19	12.7	1.16	94	.22	8	.02
5	85	.6	12.7	1.15	98	.69	5	.03
6	80	.22	12.7	1.16	93	.26	8	.02
7	152	5.96	9.9	1.15	175	6.85	50	1.94
8	89	.27	12.8	1.15	102	.31	9	.03
9	8619	3.89	3.7	1.05	9050	4.08	190	.09

TOTALS: HCWTD = 337 COWTD 2.73

AVERAGE COLD CYCLE CONCENTRATION HC= 345.5 CO= 2.79

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	580	8.39	6.6	1.32	766	11.07	28	.4
2	97	.33	12.7	1.16	113	.38	10	.03
3	89	.58	12.7	1.15	102	.67	26	.17
4	79	.25	12.7	1.16	92	.29	8	.03
5	73	.45	12.7	1.15	84	.52	4	.02
6	80	.27	12.7	1.16	93	.31	8	.03
7	154	6.11	9.5	1.18	177	7.21	50	2.04
8	85	.27	12.7	1.16	99	.31	9	.03
9	8843	3.88	3.6	1.04	9202	4.04	193	.08

TOTALS: HCWTD = 336 COWTD 2.83

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	580	8.39	6.6	1.32	766	11.07	28	.4
2	93	.31	12.7	1.16	108	.36	10	.03
3	89	.66	12.5	1.16	103	.77	26	.2
4	76	.22	12.7	1.16	88	.26	8	.02
5	82	.69	12.7	1.14	93	.79	4	.04
6	84	.31	12.7	1.16	97	.36	9	.03
7	152	6.12	9.5	1.18	179	7.22	51	2.04
8	89	.29	12.7	1.16	103	.34	9	.03
9	9235	3.77	3.4	1.03	9564	3.88	241	.08

IX-68 TOTALS: HCWTD = 346 COWTD 2.87

AVERAGE HOT CYCLE CONCENTRATION HC= 341 CO= 2.85

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 342.575 PPM

CARBON MONOXIDE 2.829 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 328-3

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	996	7.22	8.1	1.18	1175	8.52	42	.31
2	237	1.98	12.7	1.08	256	2.14	23	.19
3	140	.91	13.1	1.1	154	1	40	.26
4	144	3.37	11.9	1.09	157	3.67	14	.33
5	146	2.95	11.9	1.11	162	3.27	8	.15
6	140	3.09	12	1.1	154	3.4	14	.3
7	142	4.61	11.1	1.11	158	5.12	45	1.45
8	136	3.68	11.7	1.1	150	4.05	13	.36
9	8156	2.43	1.9	1.33	10847	3.23	228	.07

TOTALS: HCWTD = 427 COWTD 3.42

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	996	7.22	8.1	1.18	1175	8.52	42	.31
2	124	2.96	12.1	1.09	135	3.23	12	.29
3	89	1.17	13.1	1.09	97	1.28	25	.33
4	112	3.63	11.8	1.09	122	3.96	11	.35
5	109	3.07	11.7	1.12	122	3.44	6	.16
6	108	2.6	12.4	1.09	118	2.83	11	.25
7	124	4.82	11.1	1.1	136	5.3	38	1.5
8	124	3.68	11.6	1.11	138	4.08	12	.36
9	7696	2.39	2	1.38	10620	3.3	223	.07

TOTALS: HCWTD = 380 COWTD 3.62

AVERAGE COLD CYCLE CONCENTRATION HC= 403.5 CO= 3.52

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	953	7.69	7.8	1.19	1134	9.15	41	.33
2	114	3.23	11.9	1.1	125	3.55	11	.32
3	88	1.34	13	1.09	96	1.46	25	.38
4	106	3	12.1	1.09	116	3.27	10	.29
5	103	3.38	11.8	1.1	113	3.72	5	.17
6	98	2.12	12.5	1.1	108	2.33	10	.21
7	117	5	10.9	1.11	130	5.55	37	1.57
8	119	3.95	11.5	1.1	131	4.34	12	.39
9	7391	2.47	1.9	1.43	10569	3.53	222	.07

TOTALS: HCWTD = 373 COWTD 3.73

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	953	7.69	7.8	1.19	1134	9.15	41	.33
2	108	3.35	11.9	1.1	119	3.68	11	.33
3	88	1.49	13	1.08	95	1.61	24	.41
4	114	4.23	11.4	1.1	125	4.65	11	.41
5	103	4.12	11.6	1.09	112	4.49	5	.21
6	106	2.95	12.2	1.09	116	3.22	10	.29
7	117	4.95	10.9	1.11	130	5.49	37	1.55
8	126	4.22	11.3	1.11	140	4.68	12	.42
9	7336	2.48	2	1.42	10417	3.52	219	.07

TOTALS: HCWTD = 370 COWTD 4.02

AVERAGE HOT CYCLE CONCENTRATION HC= 371.5 CO= 3.875

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 382.7 PPM

CARBON MONOXIDE 3.75075 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 328-4

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1005	7.54	8.4	1.14	1146	8.6	41	.31
2	195	3.21	12.4	1.06	207	3.4	18	.3
3	124	.91	13.5	1.07	133	.97	34	.25
4	133	3.16	12.4	1.06	141	3.35	13	.3
5	154	3.93	11.9	1.07	165	4.21	8	.2
6	126	3.1	12.4	1.07	135	3.32	12	.3
7	135	4.93	11.2	1.09	147	5.37	42	1.52
8	133	3.75	12	1.07	142	4.01	13	.36
9	7856	2.43	2	1.35	10606	3.28	223	.07

TOTALS: HCWTD = 404 COWTD 3.61

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1005	7.54	8.4	1.14	1146	8.6	41	.31
2	109	3.14	12.3	1.07	117	3.36	10	.3
3	88	1.34	13.3	1.07	94	1.43	24	.37
4	108	3.81	11.9	1.03	117	4.11	10	.37
5	108	4.09	11.9	1.07	116	4.38	5	.21
6	98	2.45	12.7	1.07	105	2.62	9	.23
7	117	5.08	11.2	1.08	126	5.49	36	1.55
8	117	4.15	11.8	1.07	125	4.44	11	.4
9	7789	2.52	2	1.36	10593	3.43	222	.07

TOTALS: HCWTD = 368 COWTD 3.81

AVERAGE COLD CYCLE CONCENTRATION HC= 386 CO= 3.71

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1026	7.69	8.1	1.16	1190	8.92	43	.32
2	106	2.73	12.7	1.06	112	2.89	10	.26
3	84	1.62	13.1	1.07	90	1.73	23	.44
4	108	4.23	11.7	1.08	117	4.57	10	.41
5	163	4.27	11.6	1.08	176	4.61	8	.22
6	108	3.61	12.1	1.07	116	3.86	10	.34
7	106	5.13	11.2	1.08	114	5.54	32	1.57
8	121	3.99	11.8	1.08	131	4.31	12	.38
9	7703	2.53	2	1.37	10553	3.47	222	.07

TOTALS: HCWTD = 370 COWTD 4.01

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1026	7.69	8.1	1.16	1190	8.92	43	.32
2	106	3.51	12.1	1.07	113	3.76	10	.33
3	79	1.64	13.3	1.06	84	1.74	22	.45
4	101	4.07	11.8	1.08	109	4.4	10	.39
5	105	3.98	11.9	1.07	112	4.26	5	.2
6	89	2.55	12.8	1.06	94	2.7	8	.24
7	103	4.97	11.4	1.07	116	5.32	33	1.51
8	117	4.12	11.8	1.07	125	4.41	11	.39
9	7714	2.62	2.1	1.35	10414	3.54	219	.07

TOTALS: HCWTD = 361 COWTD 3.9

AVERAGE HOT CYCLE CONCENTRATION HC= 365.5

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON = 372.675 PPM

CARBON MONOXIDE = 3.86925 PERCENT CO= 3.955

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 331-1

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1016	5	6.5	1.5	1524	7.5	55	.27
2	284	1.1	12.9	1.09	310	1.2	28	.11
3	225	1.26	13.1	1.07	241	1.35	62	.35
4	264	1.95	12.7	1.08	285	2.11	25	.19
5	265	2.29	12.5	1.08	286	2.47	13	.12
6	253	1.35	13	1.08	273	1.46	24	.13
7	297	5.99	10.5	1.09	324	6.53	92	1.85
8	271	2.11	12.8	1.06	287	2.24	26	.2
9	6931	3.17	3.4	1.26	8733	3.99	183	.08

TOTALS: HCWTD = 508 COWTD 3.3

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	1016	5	6.5	1.5	1524	7.5	55	.27
2	323	1.3	13	1.07	346	1.39	31	.12
3	222	1.12	13.1	1.08	240	1.21	62	.31
4	268	1.95	12.8	1.07	287	2.09	26	.19
5	259	2.43	12.5	1.07	277	2.6	13	.12
6	250	1.36	13.1	1.07	267	1.46	24	.13
7	293	5.91	10.6	1.08	316	6.38	89	1.81
8	266	1.96	12.9	1.06	282	2.08	25	.19
9	6906	3.19	3.4	1.26	8702	4.02	183	.08

TOTALS: HCWTD = 508 COWTD 3.22

AVERAGE COLD CYCLE CONCENTRATION HC= 508 CO= 3.26

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	931	5.66	6.5	1.46	1359	8.26	49	.3
2	248	1.26	12.8	1.1	273	1.39	24	.12
3	190	.78	13	1.1	209	.86	54	.22
4	251	1.7	12.8	1.08	271	1.84	24	.16
5	250	2.13	12.5	1.09	272	2.32	13	.11
6	238	1.12	13	1.09	259	1.22	23	.11
7	285	5.95	10	1.13	322	6.72	91	1.9
8	259	1.83	12.9	1.07	277	1.96	25	.17
9	6907	3.19	3.4	1.26	8703	4.02	183	.08

TOTALS: HCWTD = 486 COWTD 3.17

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	931	5.66	6.5	1.46	1359	8.26	49	.3
2	245	1.34	12.8	1.09	267	1.46	24	.13
3	180	.74	13	1.11	200	.82	51	.21
4	251	1.72	12.8	1.08	271	1.86	24	.17
5	251	2.08	12.7	1.07	269	2.23	13	.1
6	240	1.2	13	1.08	259	1.3	23	.12
7	287	6.13	10.2	1.11	319	6.8	90	1.92
8	264	2.03	12.8	1.07	282	2.17	25	.19
9	6982	3.1	3.3	1.27	8867	3.94	186	.08

TOTALS: HCWTD = 485 COWTD 3.22

AVERAGE HOT CYCLE CONCENTRATION HC= 485.5 CO= 3.195

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 493.375 PPM

CARBON MONOXIDE 3.21775 PERCENT

NDIR EXHAUST EMISSION CHART ANALYSIS

California 9-Mode Truck Schedule

Run 331-2

CYCLE 1

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	730	3.94	7.5	1.47	1073	5.79	39	.21
2	307	1	13	1.09	335	1.09	30	.1
3	205	.58	13.1	1.1	225	.64	58	.16
4	237	1.1	13.1	1.08	256	1.19	23	.11
5	242	1.48	12.7	1.1	266	1.63	13	.08
6	245	1.28	13	1.08	265	1.38	24	.12
7	312	5.7	10.6	1.09	340	6.21	96	1.76
8	272	1.17	13.1	1.07	291	1.25	26	.11
9	5827	3	3.7	1.36	7925	4.08	166	.09

TOTALS: HCWTD = 475 C0WTD 2.74

CYCLE 2

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	730	3.94	7.5	1.47	1073	5.79	39	.21
2	238	1.05	13	1.09	259	1.14	23	.1
3	178	.67	13.1	1.1	196	.74	50	.19
4	229	1.12	13.1	1.08	247	1.21	22	.11
5	235	1.69	12.6	1.1	258	1.86	12	.09
6	236	1.12	13.1	1.08	255	1.21	23	.11
7	287	5.68	10.6	1.09	313	6.19	89	1.75
8	245	1.28	13.2	1.06	260	1.36	23	.12
9	6181	3.03	3.6	1.33	8221	4.03	173	.08

TOTALS: HCWTD = 454 C0WTD 2.76

AVERAGE COLD CYCLE CONCENTRATION HC= 464.5 C0= 2.75

CYCLE 3

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	975	5.57	6.6	1.45	1414	8.08	51	.29
2	243	1.02	13.1	1.08	262	1.1	23	.1
3	176	.67	13.1	1.1	194	.74	50	.19
4	230	1.17	13	1.09	251	1.28	22	.11
5	233	1.69	12.7	1.09	254	1.84	12	.09
6	234	1.18	13	1.09	255	1.29	23	.11
7	285	6.05	10.5	1.09	311	6.59	88	1.86
8	240	1.42	13	1.08	259	1.53	23	.14
9	6313	3.18	3.5	1.32	8333	4.2	175	.09

TOTALS: HCWTD = 467 C0WTD 2.98

CYCLE 4

MODE	HC	CO	CO2	CORFAC	HCCOR	COCOR	HCWTD	COWTD
1	975	5.57	6.6	1.45	1414	8.08	51	.29
2	237	1.07	12.9	1.1	261	1.18	23	.11
3	170	.63	13.1	1.1	187	.69	48	.18
4	220	1.1	13.1	1.08	238	1.19	21	.11
5	228	1.44	12.7	1.1	251	1.58	12	.07
6	231	1.01	13.1	1.08	249	1.09	22	.1
7	277	5.84	10.4	1.1	305	6.42	86	1.82
8	236	1.36	13.1	1.07	253	1.46	23	.13
9	6577	3.16	3.4	1.3	8550	4.11	180	.09

TOTALS: HCWTD = 466 C0WTD 2.9

AVERAGE HOT CYCLE CONCENTRATION HC= 466.5 C0= 2.94

IX-12

FOUR CYCLE COMPOSITE EMISSION: HYDROCARBON 465.8 PPM

CARBON MONOXIDE 72.8735 PERCENT

APPENDIX A

(Note: Figures in this appendix are at the end of the text, and are followed by numbered tables.)

Development of Detroit-Area Road Routes

The first item of road work leading to the development of dynamometer mode cycles was to establish road routes for each weight group that would provide truck operating modes reasonably close to those experienced in the earlier Los Angeles survey (Contract PH 86-62-12). The work on road-route development was necessarily done with the original SLAVE units used in the Los Angeles survey in order to be able to compare the new data with the survey data. All comparisons were made in terms of the nine major modes derived in the computer operation on a percent engine revolution basis.

From the ten trucks in each weight group, a median truck was selected as being representative of the group. This was an arbitrary selection based on relative gross vehicle weight (GVW), engine displacement, and gear ratios. (The selection was not based on exhaust emission measurements.) The median truck selected for each weight group was then used for the road-route development program.

The final routes developed (the DLA routes) are illustrated in Figures A-1 and A-2. Since traffic conditions alone could not be relied on to give good correlation with the Los Angeles data, a number of controlled stops, accelerations and decelerations had to be introduced into the route driving procedures. Specific driving patterns for each weight group are listed in Tables A-1 to A-4. It will be noted that a segment of freeway operation is included for Group IV trucks; this corresponds to the rather sizeable amounts of Los Angeles freeway operation found for trucks in this weight group only.

The degree of correlation obtained between average Los Angeles mode data and the Detroit-Los Angeles (DLA) data for the median trucks is shown in Table A-5. The data in the table indicates that a

reasonably good correlation was achieved.

Later in the program, when exhaust samples were being collected during road-route operation, the question arose concerning the authenticity of the DLA road-route data in view of the controlled driving patterns specified on those routes. To investigate this point, alternate "PLA" trial routes were developed for the Group II and III median trucks. The PLA routes were located in a hilly, congested area, farther from Ethyl's Detroit laboratories (Pontiac area) where road operation was controlled entirely by normal traffic flow. Mode data obtained with the "old" SLAVE over the PLA routes showed reasonably good correlation with the LA and DLA data (Table A-6). The similarity of the PLA and DLA routes was further verified by comparing exhaust emissions and "new" SLAVE data from the Group II and III trucks over the two routes (Tables A-7 and A-8). Again, a reasonable good correlation was observed between the data from the two routes. Since both exhaust emissions and driving modes were nearly the same for the DLA and PLA routes, it was concluded that the emission and mode results obtained from DLA operation were a valid representation of the results from trucks operated in normal city service. Because of the good correlation observed using the Group II and III median trucks, it was not considered necessary to make a similar check for the Group IV median truck.

Pace Proportional Samplers

Three Pace proportional samplers, furnished by the PHS, were used for collecting exhaust samples on the road and the chassis dynamometer (Figure A-3). Two of the samplers were fitted with oversize bag tanks (each about 6 cu. ft. capacity) to handle the relatively large exhaust samples of the Group III and IV trucks on the road. The third sampler was left in standard factory configuration, and was used primarily with the lighter trucks. Except for the addition of a pressure-bleed valve on the bag tank and the substitution of more dur-

able counter knobs on the servo-amplifier BAL potentiometer, all sampler hardware and electrical components were standard.

Sample bags and transfer and nitrogen-fill bags were fabricated by the PHS. Sample and transfer bags were made of 2-mil Tedlar or Teflon, and Scotchpak was used for nitrogen bags. Bag fittings exposed to the sample stream were of Teflon or stainless steel.

Samplers were calibrated periodically on the bench according to the basic procedures outlined in the (unnumbered) Ethyl publication, "Mobile Laboratory Operation Manual for Public Health Service 1966 Exhaust Emission Surveillance Program," prepared January 1966 under Contract No. PH 86-66-2. (An updated and somewhat revised procedure was prepared at the request of R. W. Hurn, Bureau of Mines, Bartlesville, Oklahoma for distribution to the Vehicle Emissions Panel of the CRC-Motor Group on Composition of Exhaust Gases. The revised procedure includes a number of modifications and observations based on Ethyl's experience with the Pace sampler.) Frequency of bench-check calibration was determined largely by the performance history of a sampler, and did not follow any set schedule. On the average, samplers were routinely calibrated after about 12 tests, or at reduced intervals as dictated by need for replacement parts, troubleshooting, or switching of components. Experience showed that the major bench-check adjustments--span and integrator counting rate--were extremely stable and rarely required readjustment. The relatively unstable but easily checked "zero's" and integrator voltage settings were checked and adjusted before each sample run. Drivers were permitted to make minor adjustments of the servo-amplifier BAL control during the course of a run, but only to the extent necessary to maintain a null meter reading in the "difference x 10" position.

Sample Train

Sample lines to the Pace samplers were of 1/4-inch nylon tubing, terminating in a 1/4-inch stainless steel tailpipe probe extending about

30 inches into the tailpipe. Probe ends were closed, and the exhaust sample was admitted through twelve 1/16-inch holes drilled in the side of the probe close to the end. To prevent condensation and plugging of the sample line in cold weather, an uncooled glass water trap was inserted in the sample line between the probe and the section of nylon tubing. An additional water trap of stainless steel, cooled in an ice-water bath, was located ahead of the sampler to protect the servo valve and flow element against moisture and condensation products (Figure A-4). No filters were used in the sample line.

Mounting and Calibration of Carburetor Laminar Flow Elements

Carburetor air flow measurements were obtained using a Meriam laminar flow element in conjunction with a Pace proportional sampler. The flow element, together with a temperature-sensing element connected to a Rustrak recorder, was mounted in a sheet metal housing (Figure A-5). Standard air cleaners for each engine were modified on the inlet side to permit mounting of the flow-element housing. In order to account for all of the air consumed by the engine, appropriate crankcase ventilation hoses were routed to the air cleaners of engines with PCV systems.

Carburetor pressure transducers also were mounted on the flow-element housing. In the original setup, short pressure lines of 1/8-inch neoprene tubing connected the transducer to the pressure taps on either side of the flow element (see Figure A-5). However, it was found that such a configuration sometimes resulted in erratic sampler operation because of the presence of high-frequency pressure oscillations in the vicinity of the laminar flow element of some trucks. The condition was overcome by installing longer (60 inch) pressure lines to provide a "volume chamber" on either side of the transducer, and by inserting 1-inch sections of pipe cleaner in the pressure lines to provide damping.

In adapting the various air-cleaner assemblies to accommodate the flow-element housing, efforts were made to minimize changes in pressure-drop characteristics and exit geometry of the air-cleaner assembly. This was accomplished by comparing the restriction of the standard air cleaner to that of the converted assembly on an air-cleaner flow stand. Since the restriction of the laminar flow element and its housing was quite low, some converted assemblies had lower total restriction than the standard air cleaner. In such cases, the total restriction was increased by attaching an area-reducing mask to the front of the air intake grill (Figure A-6). In all assemblies, it was possible to maintain standard exit configuration of the air cleaner into the carburetor air horn.

Oil-bath air cleaners having an annular air-intake opening extending completely around their circumference showed the lowest restriction of all types used. Some difficulty was experienced in maintaining total restrictions as low as standard in these cases. Figure A-7, showing the pressure-drop curves for the IHC I-2 air cleaner, illustrates a case in which the pressure drop of the modified assembly was higher than that of the standard unit despite several attempts to minimize restriction. Pressure-drop curves of a number of other representative assemblies are shown in Figures A-8 through A-10. Table A-9 summarizes the flow characteristics of each standard and modified air-cleaner assembly used in the program. In a few cases where heated air was normally ducted to the air cleaner, approval was obtained from the PHS to use underhood air with the modified assembly because the air-heating system could not be adapted to the flow-element housing.

Laminar flow elements were calibrated during the routine measurements of pressure drop of the standard and modified air-cleaner assemblies. Pressure drops across the laminar flow element alone and across the complete modified assembly were measured simul-

taneously for the applicable flow range of each unit (see example in Figure A-10). These tests were conducted on the laboratory air-cleaner flow stands of various Detroit-area truck manufacturers.

The three laminar flow elements (PHS Nos. 13, 14 and 18, each 1 inch long and 6 inches in diameter) used with the Pace samplers were found to have the same calibration curve, shown in Figure A-11. Flow measurements made at laboratory ambient temperatures (70 to 80°F) were corrected to 68°F using the curve of correction factor for temperature shown in Figure A-12. This curve is based on the absolute viscosity of air at various temperatures (see Handbook of Chemistry and Physics, 47th edition, p. F-39, Chemical Rubber Co., Cleveland, 1966).

Analytical Equipment and Operation

Bag Analyses

Bag samples of diluted exhaust were analyzed (except for NO_x) on analysis console No. PHS 3875, built by Ethyl for the PHS. This console contains a bank of three non-dispersive infrared analyzers, a flame ionization detector, an oxygen analyzer, hydrocarbon subtractive columns, associated filters, pumps, valves, pressure gages, and quick-disconnect fittings. Sample flow lines are of nylon tubing. Table A-10 lists the major specifications and ranges of the analyzers. Photographs of the console are shown in Figure A-13.

IR and FID analyzers were calibrated according to standard Ethyl procedures. These procedures are outlined in the surveillance-program operation manual referred to on Page A-3 in the preceding discussion of the Pace samplers. (A departure from the manual procedure was the use of single-component gases in nitrogen for normalizing or "spanning" the instruments. Multi-component blends containing butane, CO, CO_2 and nitrogen were used for calibration.) Calibration gases and FID fuel (40%hydrogen in nitrogen) were supplied by Scott Research Laboratories. Nitrogen used for instrument zero and exhaust-sample dilution was obtained locally from Liquid Carbonic.

Oxides of nitrogen (NO_x) in exhaust samples were determined by wet-chemical methods using a modified Saltzman technique (Figure A-14). This technique also is described in the surveillance-program operation manual mentioned earlier (Page A-3). The spectrophotometer used in the analyses was a single-range Bausch & Lomb "Spectronic 20".

California-Cycle Charts

Ethyl's "Console No. 6" (tag No. D-10739) housed the NDIR analyzers and recorders used to obtain chart data from the California cycle. Auxiliary equipment associated with the console--pumps, solenoid valves, filters, and ice-bath water traps--were housed in a separate "sample prep" cart. Figure A-15 shows a photograph of the analyzer console and cart. Analyzer details are given in Table A-11.

Calibration of analyzers and recorders followed established Ethyl procedures. Single-component gases in nitrogen were used for both calibrating and normalizing. HC analyzers were calibrated with hexane and normalized with propane. Calibration gases were supplied by Matheson Co. and analyzed for concentration by Ethyl. High-purity nitrogen for instrument zero was obtained from Liquid Carbonic.

Modifications of SLAVE Units No. 1 and 6

A number of major alterations were made in SLAVEs 1 and 6 since they were first used in the PHS Truck and Bus Survey (Contract No. PH 86-62-12). The original nine vacuum categories were expanded to 27, and an additional bit was added to indicate closed-throttle operation and the gear in which the vehicle is running. To monitor the new data format, parity circuits were revised and program changes were made to control the new format. Logic circuits also were added to insure proper coding.

The following discussion covers only the changes made in the original equipment. Basic design details common to both the original

and modified units are covered in an earlier Ethyl report, GR 63-24, "Survey of Truck and Bus Operating Modes."

Vacuum Transducer and Code

The vacuum transducer segments are arranged into 27 discrete steps. Table A-12 lists the steps, the range for each, and the tape code. Circuit modifications are shown in drawings No. I 66-7019 and I 67-7028 (Figures A-16 and A-17).

The 27 steps are separated into three categories of nine each. Two of the categories have a letter code assigned to them. An "X" is coded with the first nine steps and an "O" with the second nine. Two nine-way "OR" circuits are used to signal "X" or "O" letter codes.

Digit memory is provided by relays K1 through K9 as in the old units. Letter code memory is provided by two flip-flop circuits, module Q. Buffer memory is provided to lock up and code the highest digit on the "Code Vac" command. This prevents multiple digit coding due to transducer wiper-arm motion during the code interval. The "OR" signals are negative 12-volt spikes. These are the "Code Vac" signals which are interrupted by memory relay series contacts. "OR" signals are used to drive Schmitt circuits, module P. The letter memory flip-flops, module Q, are driven by the positive-pulse output of the Schmitt circuits. Both modules P and Q are Packard Bell TF-3 circuit boards. Module P has been modified to operate as a Schmitt circuit.

Bridging contacts are used on the wiper arm of the vacuum transducer. Although bridging substantially improves mechanical reliability and accuracy of calibration, it does result in some problems. These problems are taken care of by the coding logic as follows:

1. The first problem arises in coding "X" and "O" when segments 9 and 10 (X9 and 01) are bridged. The "OX" gate locks out "X" code signals from the B10 power amplifier when bridging occurs. Q10 is always open by reset from R4 at the end of the vacuum code interval. Q10 stays at

-12 volts until bridging or a legitimate "O" occurs. When this happens, Q10 drops to 0 volts to close "OX" gate and prevent this "X" code. At the same time K1 and Q13 set up the 01 code or "O" codes.

2. The same general problem occurs again at the 09 to 1 transition. "O" is killed by a signal from segment 19 via amplifiers 31-30 and "O" gate. All "O" signals are passed until bridging of 18-19 occurs. At this time 31-30 amplifier is turned on to drop gate "O" input to 0 volts and kill blue "O" signals to 14 P.

3. A third situation arises from the fact that we always want the highest numerical digit relay to lock up and code. K9 lock-up is no longer compatible with coding the next higher vacuum increment to be stored in K1. To avoid this situation K9 is connected to ground through a transistor. This transistor is turned on so that K9 can lock up if it is picked. When bridging occurs on the 9-1 transitions, K9 transistor is turned off. This prevents K9 from locking up and breaking signal to K1. The double amplifier is used to provide polarity logic.

   Sometimes with the bridging condition the transistor is turned off, but not before a charge is stored on the K9 holding condenser. With the transistor off this condenser has a long discharge time. This causes 9 and 1 to be coded together. By shunting the transistor with a 4.7K resistor, the discharge time for the holding condenser is cut to about 18 milliseconds. This interval is short enough to prevent dual coding.

4. A fourth situation resulted from slow operation of K10. Both gear and vacuum signals are memorized on relays K1 to K9. In the program format, "Select Gear" is set

up immediately after "Select Vac". Bridging of mercury contacts at K10 for about 1 millisecond during this transition permitted a false set up of "X" or "O" vacuum memories by the "Select Gear" signal. False "X" or "O" coding is blocked by addition of gate signals to "OX" gate and to "O" gate.

Gear Code

A gear-coding function has been added to the SLAVEs. The vehicle operator pushes buttons to indicate which gear the vehicle is in as it is being driven. To do this a fourth data bit was added to the punching format. This entailed program changes to supply "Code Gear" signals and the addition of a punch command. The sequence of the program is shown in Figure A-18.

The gear indicator, drawing No. I 66-7017 (Figure A-19), is a pushbutton switch. It is interlocked so that only one button can be depressed at a time. The switch has 10 positions. A 9 is coded for neutral, or for the tenth button, or when no buttons are depressed. The switch is mounted in a small box. The box has two strong magnets attached to it that allow the selector box to be mounted on the dashboard at any convenient location for the driver.

The program matrix, module C, drawing No. I 61-7053 (Figure A-20), has no spare connector pins. The "Code Gear" signal is brought out separately to B11. A disconnect is in this lead so that the module can be removed. The lead is blue. The "Code Gear" signal is isolated from the program matrix by an emitter follower 11 B 12. This signal is used to drive another emitter follower power-amplifier combination. The power amplifier drives a relay to switch from "Code Vac" to "Code Gear." This commutating isolates the gear and vacuum functions. The commutating relay (K30) is located on the panel frame near K1 and K2. The power amplifier and logic circuits are next to K1.

Closed-Throttle Indication

An "X" is coded along with the gear data bit when the vehicle throttle is closed. A closed-throttle relay is wired so that it is connected to -12 volts (see drawing No. I 62-7006, Figure A-21). When closed throttle exists, the other end of the relay is grounded to close a normally open pair of contacts. The "Code Gear" signal from 12B is differentiated and applied to PP4 by the closed-throttle contacts (see Figure A-17). A fast positive pulse from PP4 drives PP1 - PP2 which are hooked up as a flip-flop. It is reset by R4 at the end of "Code Gear" interval. A -12 volt output from PP2 drives the "X" OR at 10B. The temporary closed-throttle memory is used to avoid coding "X" just before or during punching operations. This gives the parity logic a chance to operate. Without this circuit many false parity punches are likely to be made.

The closed-throttle relay is located on the panel in back of the 12-volt filter. PP-1, PP-2 and PP-4 are on the parity panel. The "X" OR is at 10B.

Parity Circuit

Odd-hole parity must be maintained for the IBM 1620 computer input tape reader. The old solid-state system has been replaced by a new solid-state system. This system uses Odd-Even comparator circuits. Drawing No. I 66-7018 (Figure A-22) shows the arrangement and circuit details.

In order to understand the system operation it is necessary to look at the individual comparators. The block diagram on the drawing is easiest to use. Input signals can be paired as both 0 volts, both -12 volts, or a 0 and -12 volt signal (see truth table on next page).

If both inputs are 0 volts, gate A output will be near ground to keep amplifier 1 off. Amplifier 1 output is -12 volts into gate C to open that leg. However, the "B" OR circuit will be near +6 volts and gate C will then be near ground. Amplifier 2 will be off to produce a -12 volt

output. If both inputs are at -12 volts, gate A is at -12 volts, biasing amplifier 1 on. This kills gate C. The result is to bias amplifier 2 off again and produce a -12 volt output. If either input is negative while the other is zero, the B OR will produce a -12 volt output signal. This turns half of gate C off. At the same time, gate A is half on to bias amplifier 1 off. With amplifier 1 off, gate C will have two negative inputs. This turns on amplifier 2 producing a 0 volt output.

Comparator operation can be summed by a simple truth table:

Inputs	Outputs
-12, -12	-12
0, 0	-12
0, -12	0

The alpha comparator drives PP-10 and PP-11 (drawing No. I 66-7010, Figure A-23). This is a standard power amplifier which drives the parity relay. A negative input to PP-10 is required to drive K27 parity relay. Alpha comparator is always negative to drive K27 unless it has an odd input. A parity punch is called for at all times. It is cancelled when an odd input occurs at any odd number of comparator circuits.

All of the diode logic for the parity circuit is located on the coding panel. The amplifiers are on a Raytheon GA-12 plug-in module. The module is located on the rear side of the code panel near the vacuum transducer. Bias resistors, 5.6K to -12 volts, have been removed. Biasing is completed by the gates in each amplifier.

SLAVE Durability Tests

Modified SLAVE units were subjected to a series of durability tests to uncover any design or component flaws (particularly marginal transistors) that might result in faulty operation. In these tests, the SLAVE units were operated over a cycling ambient-temperature range of -15° to 100°F; simultaneously, operating voltages were varied from

11 to 17.5 volts. A readout of the perforated tape information (coded vacuum, speed and gear data) during the test cycles indicated that all components were performing satisfactorily and that the SLAVEs could be expected to give good service in the range of temperatures and voltages explored.

Recording and Handling of SLAVE Mode Data

The so-called "new" SLAVE units used to obtain the major portion of the vehicle mode data in this program were the systematic outgrowth of the "old" SLAVEs developed under contract No. 86-62-12. With both designs, second-by-second information on engine speed and manifold vacuum was punched on a paper tape. In contrast with the earlier units, however, the new SLAVEs provided for the additional recording of:

1. Twenty-seven vacuum steps instead of nine,
2. Transmission gear position, and
3. The occurrence of closed throttle.

Concurrent with the development of the new recording units, new computer programs were written to handle the data in such a way as to be of maximum use both in the mode-cycle development work and in the interpretation of the mode test results from the dynamometer and the road. Data fragmentation--an undesirable feature inherent in the processing of the earlier SLAVE data--was eliminated by:

1. Broadly classifying the tape information in terms of only four major operating categories (idle, cruise, acceleration, and deceleration) instead of the 15 used with the programs for the earlier SLAVEs, and
2. Eliminating the subcategorization of data on the basis of engine speed.

With the new program, major operating categories were further subdivided into 769 subcategories depending on initial and final speed and power modes. The computer program for the subcategorization operation was very large and required the use of the UNIVAC 1107

computer at Notre Dame University, South Bend, Indiana for processing the data. This computer is connected to the Detroit laboratories by a teleprocessing link. Summarized output data for each run were stored on a magnetic tape and later used to obtain averages for the various weight groups of vehicles.

The three basic programs used for handling the bulk of the data were: TTC66, for transferring tape information to a deck of punched cards; MODES, for subcategorizing and tallying the data; and MODAVE, for averaging the results. Detailed discussions of the programs are found in Ethyl report No. GR 67-99, "Computer Programs for 1967 SLAVE Unit Modifications," also prepared under Contract No. PH 86-66-150.

Paper Tape Punching Format

The SLAVE units used in the mode-cycle program give a total of four characters, which can be represented by the symbols VGTU, followed by the "end-of-line" punch (see Figure A-18). The TU punches represent the tens and units of the coded engine speed (rpm/40). The manifold vacuum transducer has 27 segments corresponding in inches Hg vacuum to 0.00 to 1.49, 1.50 to 2.49, etc. by one-inch intervals, with the 27th segment corresponding to 26.5 and above. These 27 values are coded to give the V punch using the IBM 1620 characters J to R, /, S to Z, and 1 to 9 (see table of vacuum coding, Table A-12). The remaining G punch carries two pieces of information. The gear in use is represented by a punch with 9 if neutral, or 1 to 8 corresponding to the gear. If the throttle is closed, the digit is "flagged".

Computer Interpretation of SLAVE Data

Idle Condition--Engine operation is defined to be in the IDL category if the throttle is closed and the manifold vacuum is within the range IVAC $\pm$ 3 and the engine speed is less than or equal to IDRPM + 40 (where IVAC is the manifold vacuum in inches Hg and IDRPM is the engine speed, both measured under idle conditions before the tests

are run). Any value of the current manifold vacuum greater than 13 in. Hg when the throttle is closed is considered to be equal to the idle vacuum, IVAC, in order to guard against mispunchings.

Power Modes--An important new feature of this work was a new concept for representing power modes rather than the criteria for full and part power based on manifold vacuum used previously. A curve relating vacuum and engine speed was obtained for each vehicle under essentially zero-torque conditions. The manifold vacuum at which the carburetor power jet opens was also obtained. The four power modes are defined as follows:

Full Power (FP)--Open throttle; manifold vacuum equal to or less than power-jet vacuum.

Part Power (PT)--Partly open throttle; manifold vacuum between power-jet vacuum and zero-torque curve.

Driven Power (DP)--Nearly closed throttle; manifold vacuum equal to or greater than zero-torque curve.

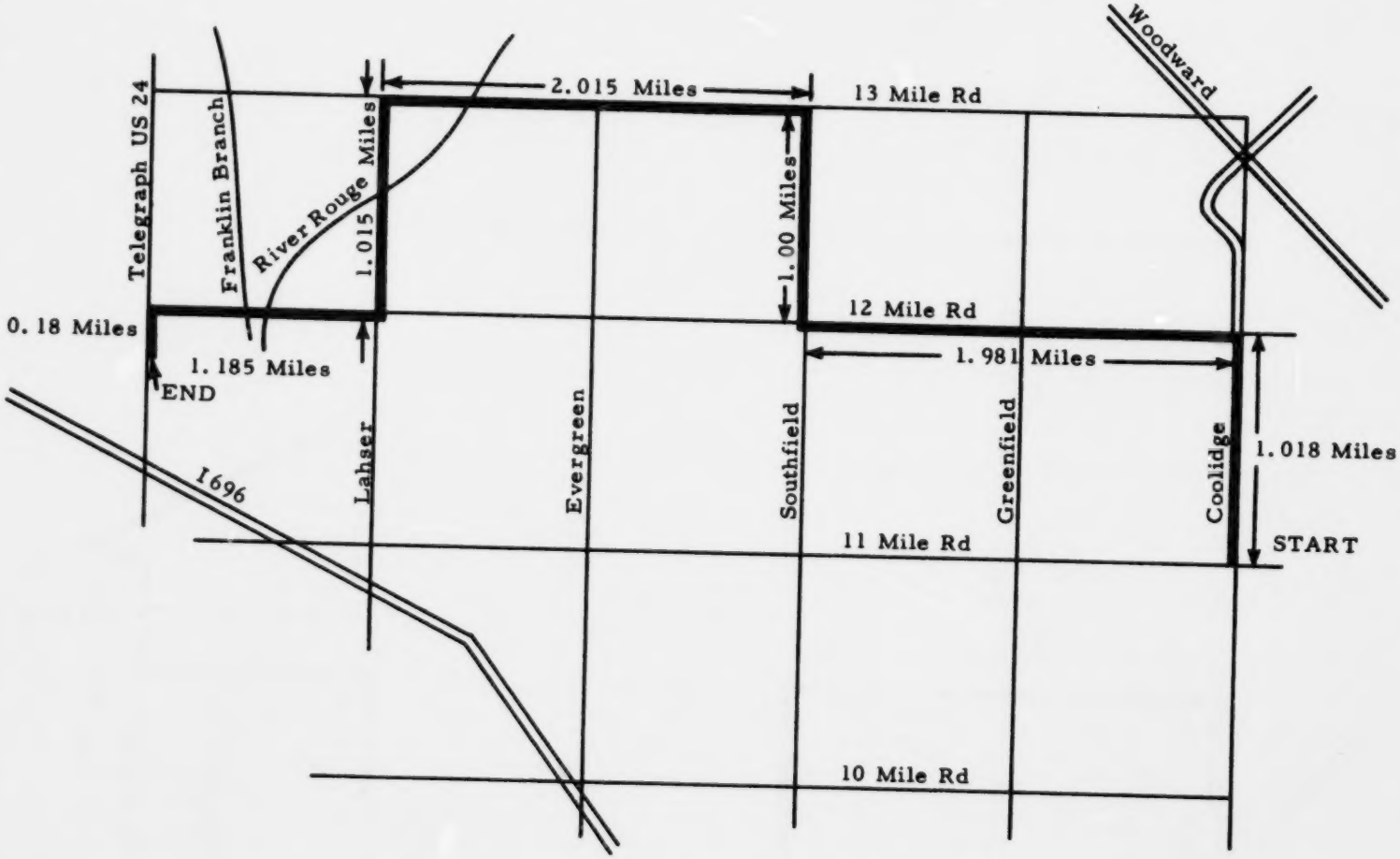
Closed Throttle (CT)--Closed throttle; manifold vacuum equal to or greater than zero-torque curve.

Speed Classes--Engine speeds are divided into the same six classes as used in the previous work:

Code	Engine Speed, rpm	Class Mark	Midspeed, rpm
00 - 14	0 - 560	1	300
15 - 29	600 - 1160	2	900
30 - 44	1200 - 1760	3	1500
45 - 59	1800 - 2360	4	2100
60 - 74	2400 - 2960	5	2700
75 - 99	3000 - 3960	6	3500

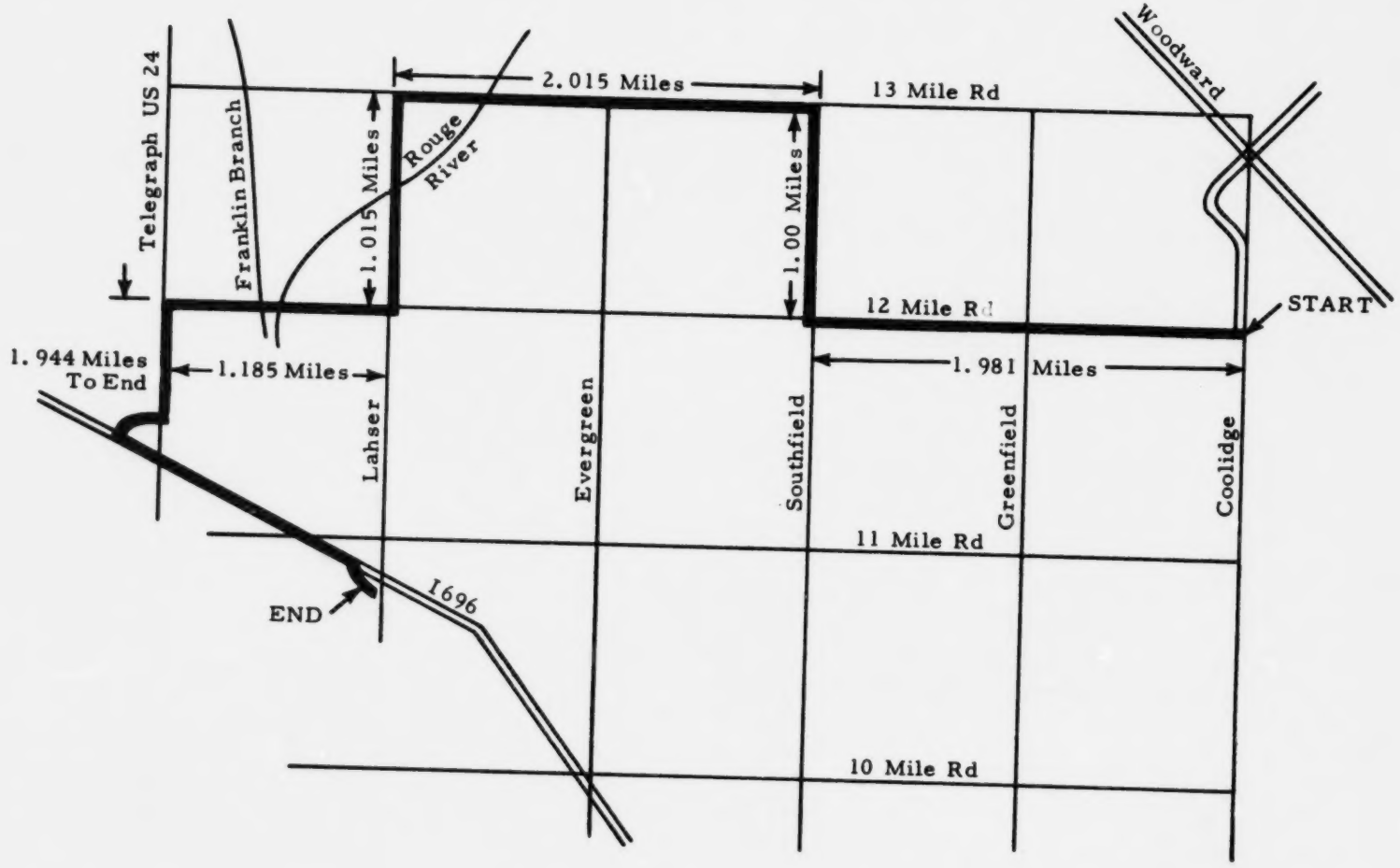
These correspond to six speed classes for the cruise category (CRU, here arbitrarily based on the last speed in the interval) and 21 speed classes for each acceleration (ACC) and deceleration (DEC) category. With four initial and four final power modes possible, the total number of subcategories is 769. A tally of the number of subcategories within each category is shown on the following page.

Category	Number of Subcategories
IDL	1 = 1
CRU	4 x 4 x 6 = 96
ACC	4 x 4 x 21 = 336
DEC	4 x 4 x 21 = 336
	769



Total Miles 8.395

Figure A-1. DLA road route for Group I, II and III trucks.
Route length was determined accurately from fifth-wheel odometer.



Total Miles 9.140

Figure A-2. DLA road route for Group IV trucks. Route length was determined accurately from fifth-wheel odometer.

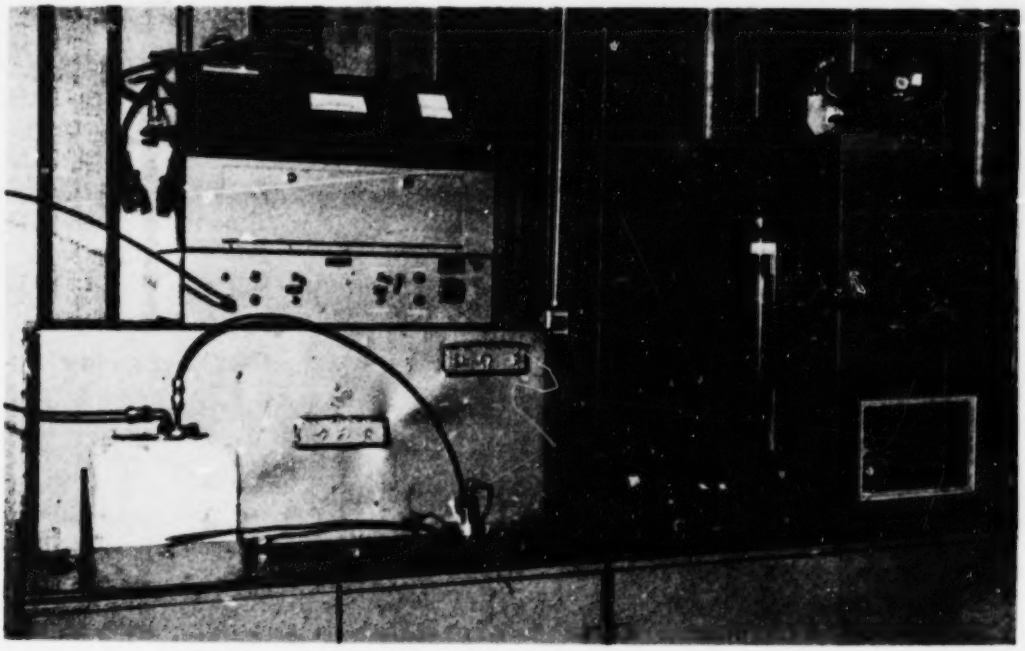


Figure A-3. Pace proportional samplers and related equipment. Sampler at left has oversize bag tank. D. C. -to-A. C. power inverter between samplers was used for road tests.

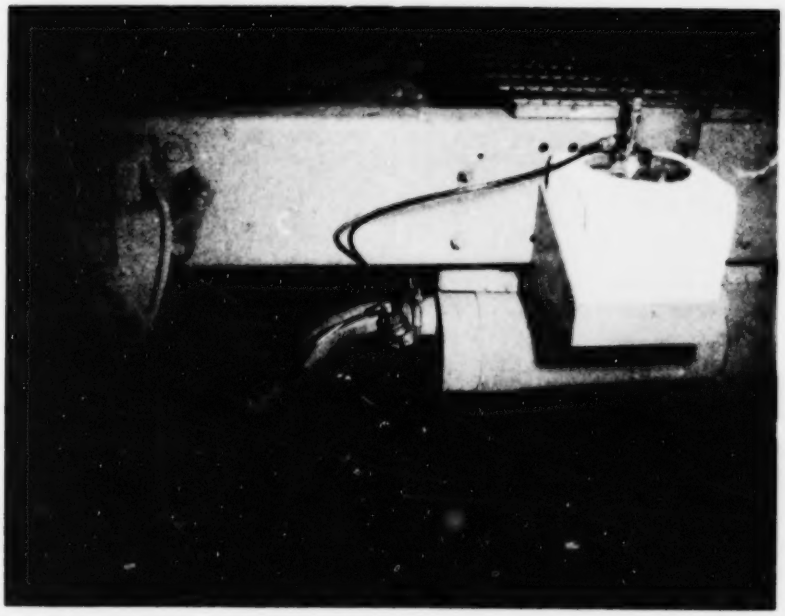
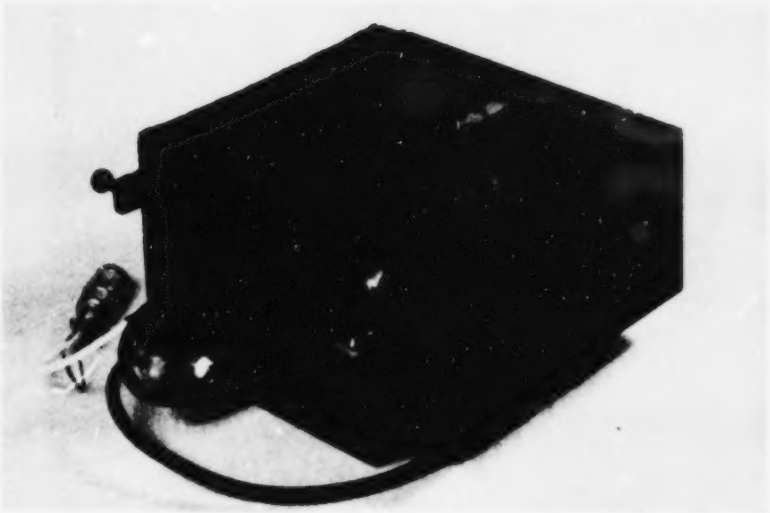


Figure A-4. Tailpipe probe and sample-line water traps installed on truck.



(Front view)

(Rear view)

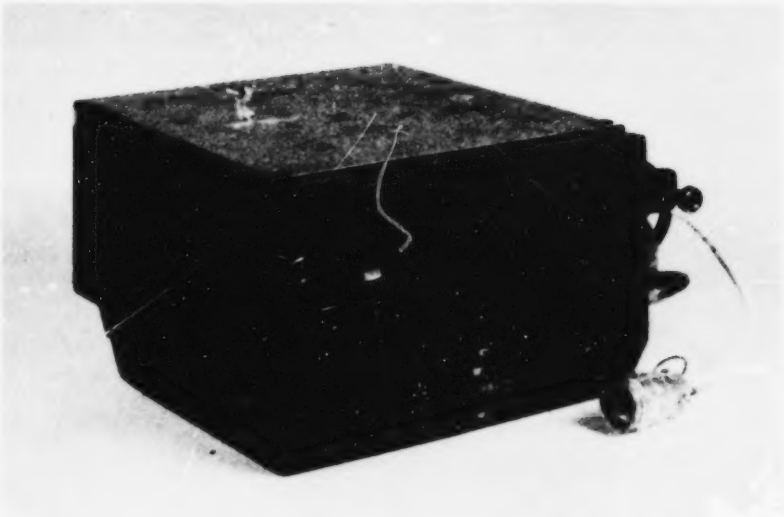


Figure A-5. Front and rear views of carburetor flow-element housing. Longer pressure lines were later installed to transducer. Electrical connector on upper side of housing (top photo) links temperature sensor to recorder cable. Lower side of flow element (bottom photo) is just visible inside housing.

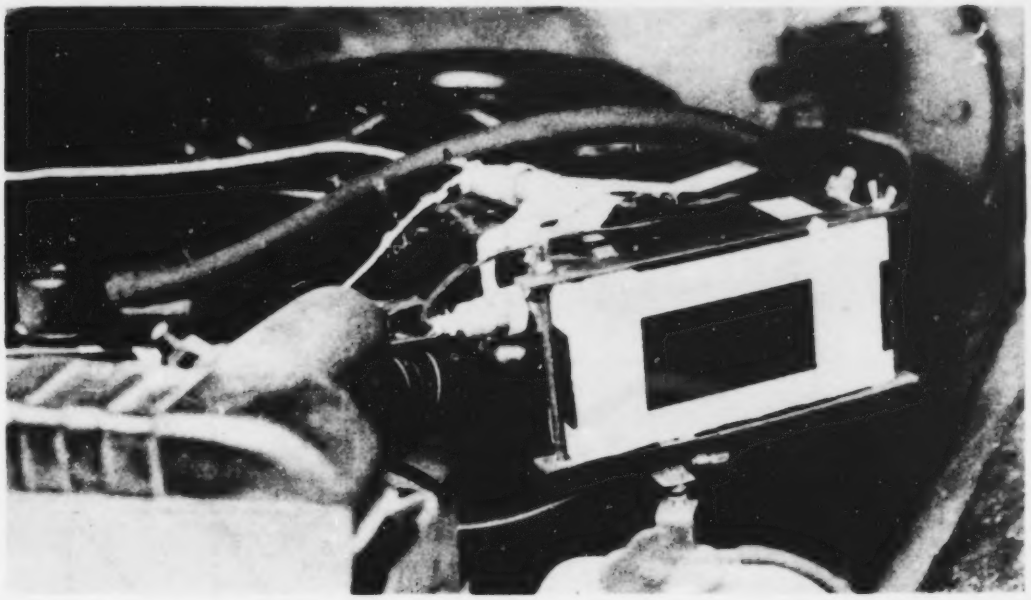


Figure A-6. Flow-element housing with area-reducing mask attached to grill. Hose across top of housing connects PCV air inlet to air cleaner.

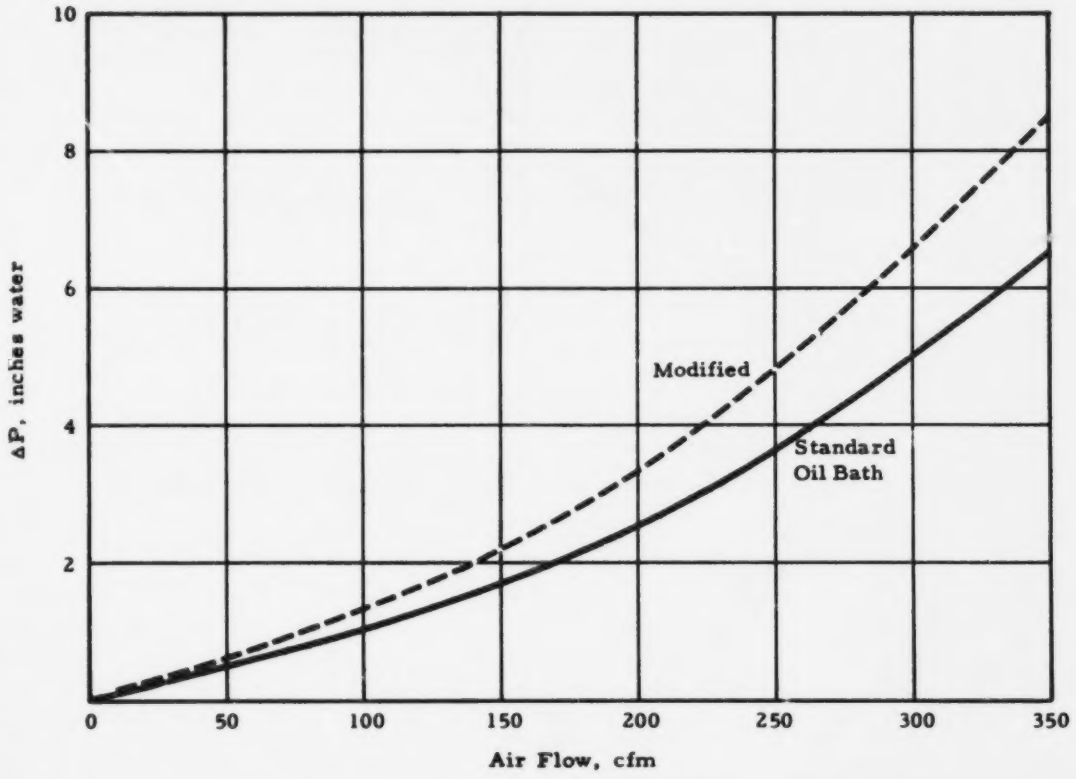


Figure A-7. Flow characteristics of IHC I-2 air cleaner.

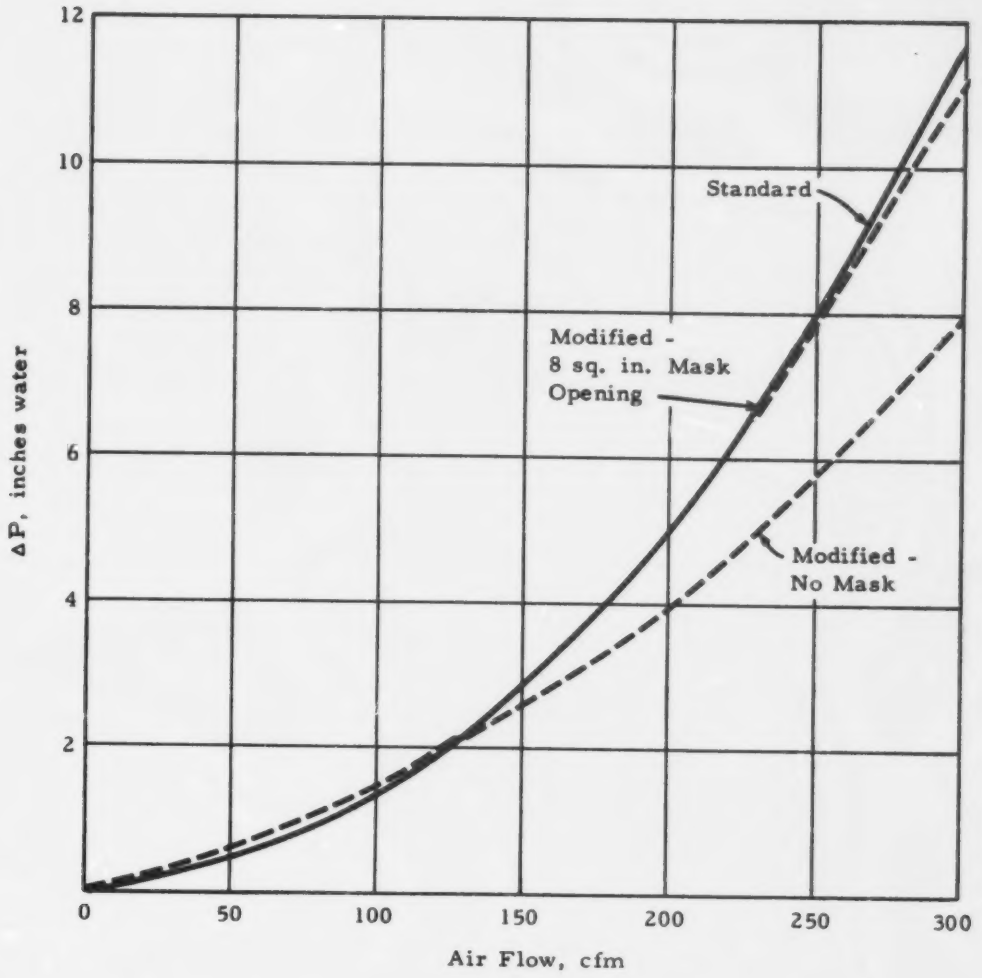


Figure A-8. Flow characteristics of Dodge D-2 air cleaner.

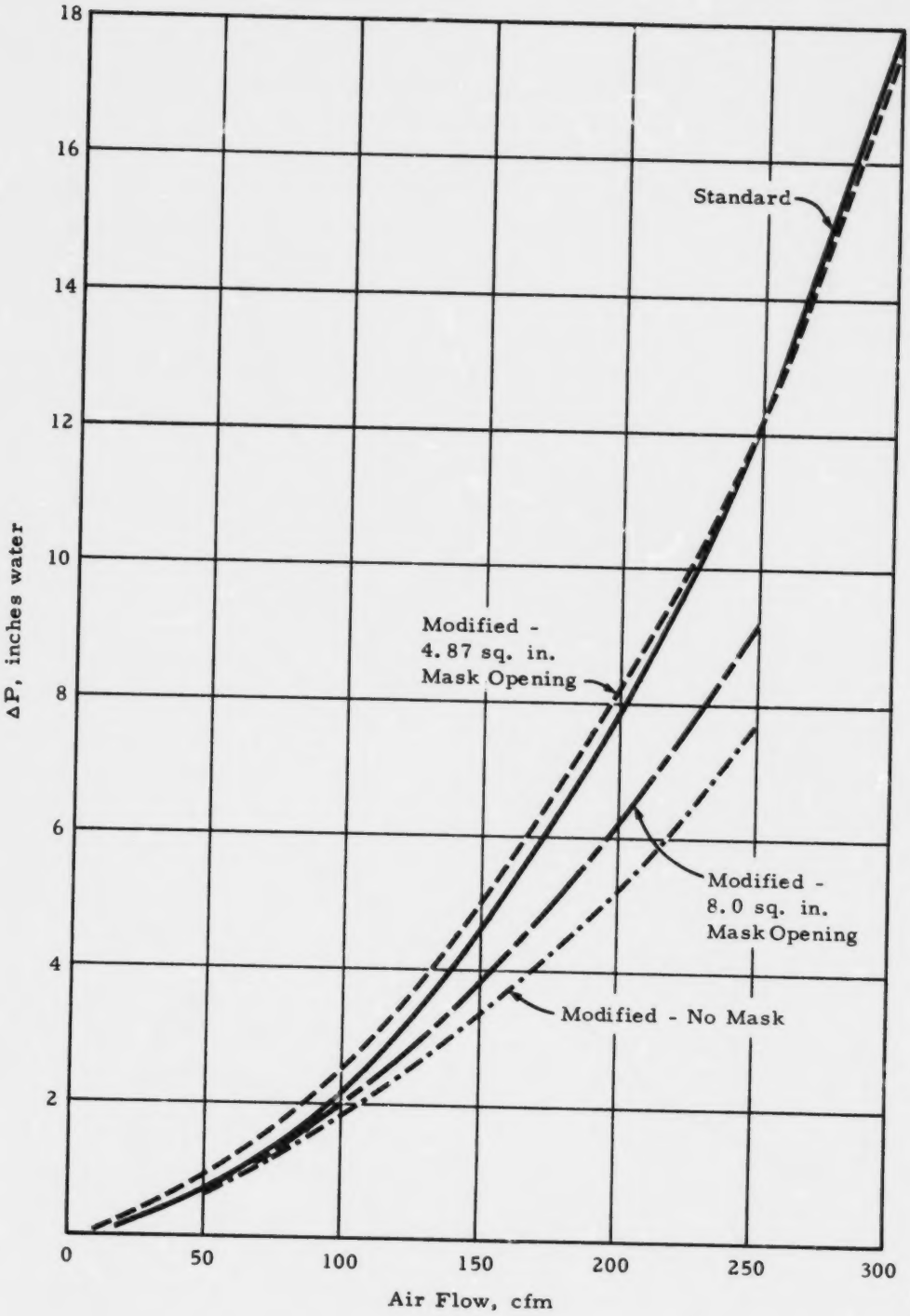


Figure A-9. Flow characteristics of Chevrolet C-2 air cleaner.

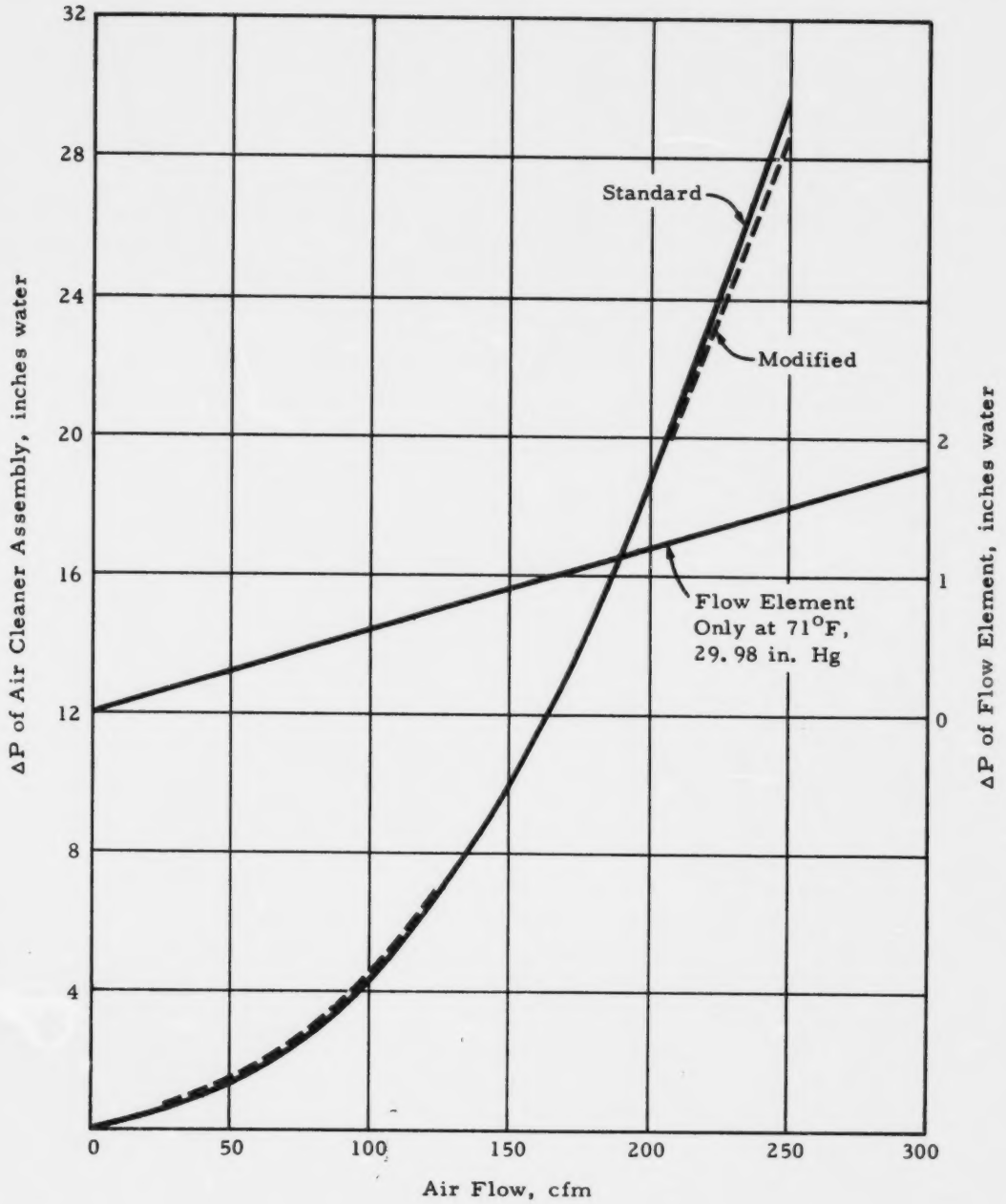


Figure A-10. Flow characteristics of GMC G-1 air cleaner. Note calibration curve of laminar flow element, developed during pressure-drop tests of modified air cleaner.

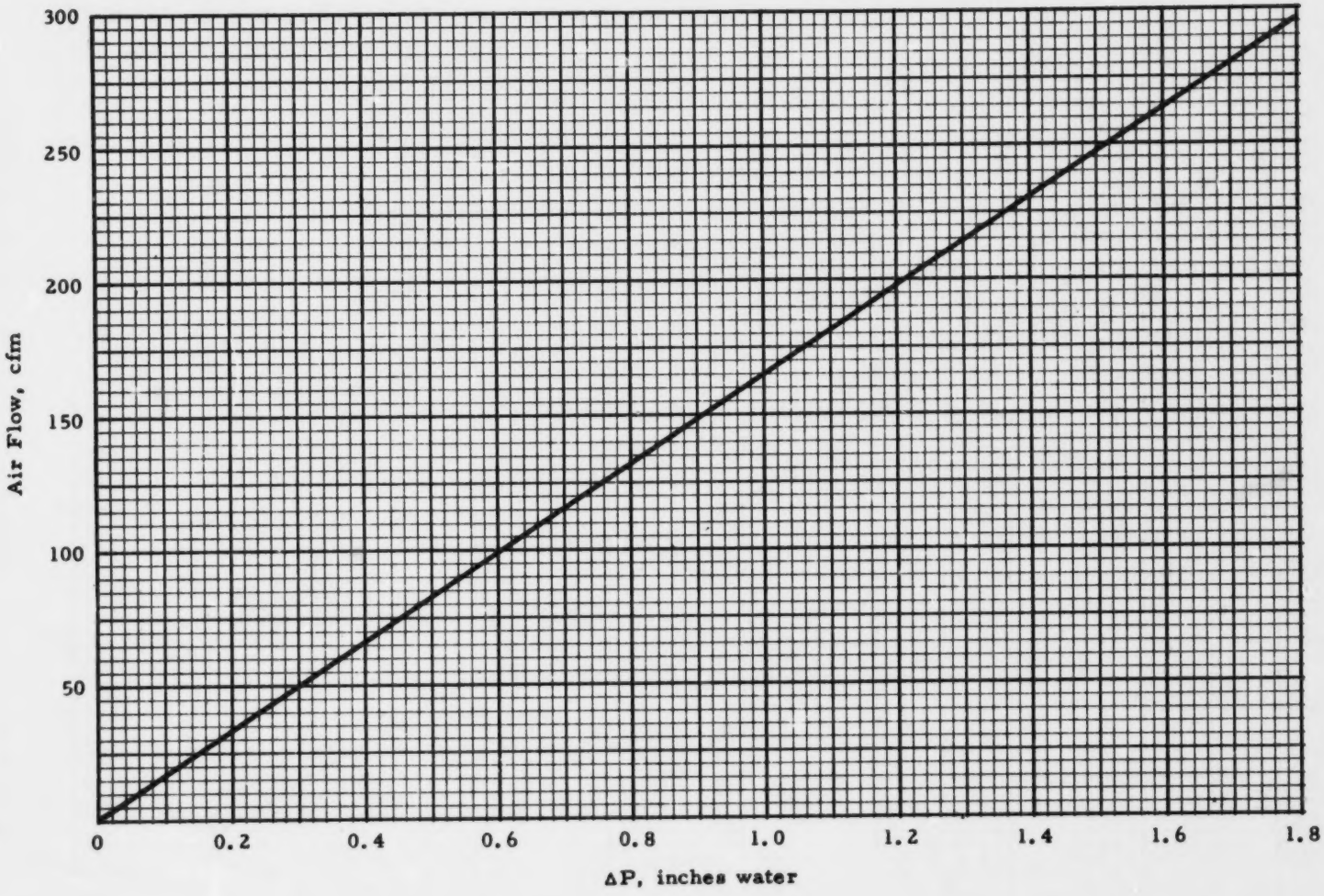


Figure A-11. Calibration curve for the three laminar flow elements (PHS Nos. 13, 14 and 18) used in test program. Flow is corrected to 68°F.

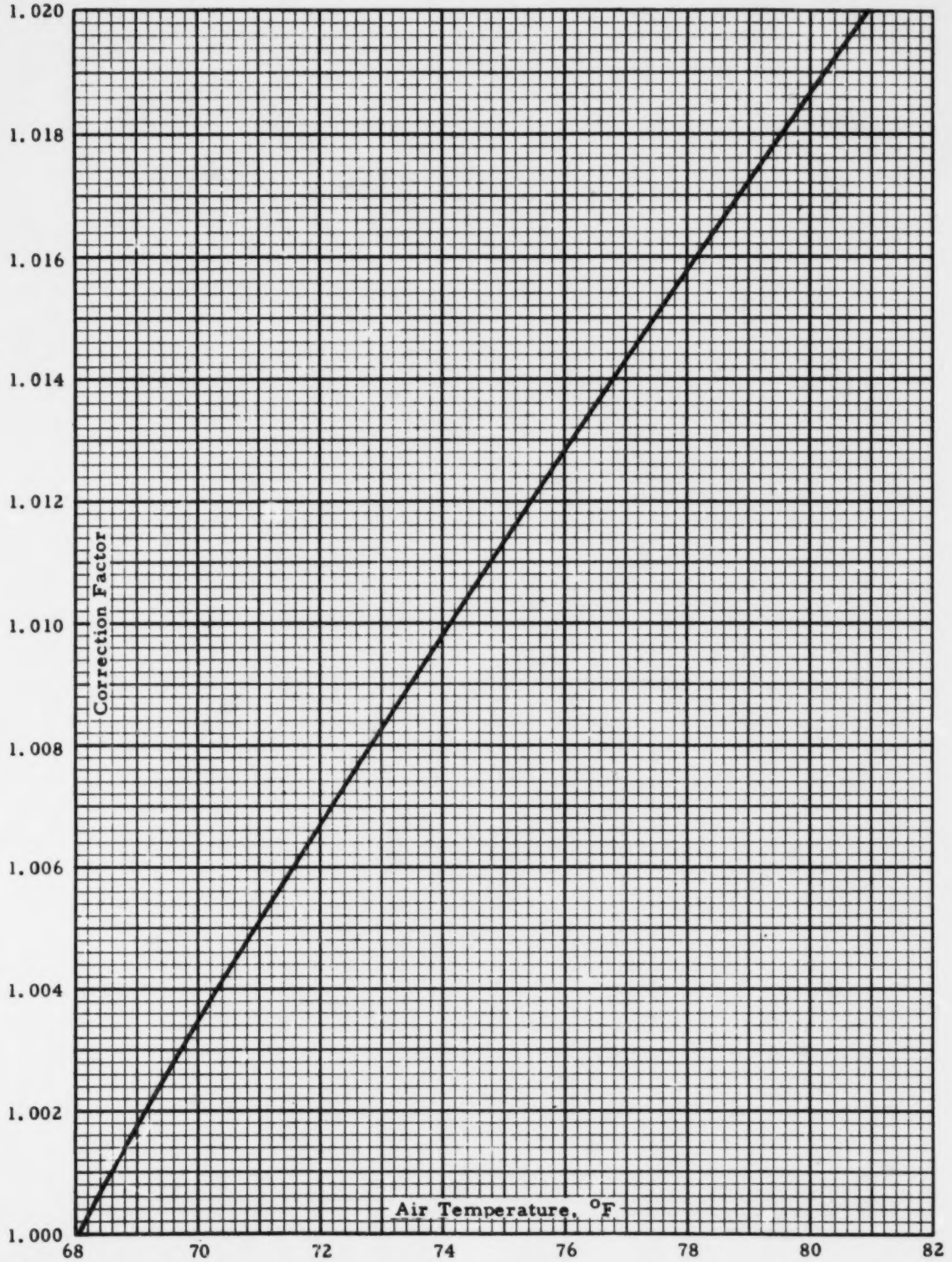


Figure A-12. Curve of correction factor for temperature, based on absolute viscosity of air.

Figure A-13. Console PHS 3875 used to analyze bag samples. Note filter holder and subtractive column on counter top.

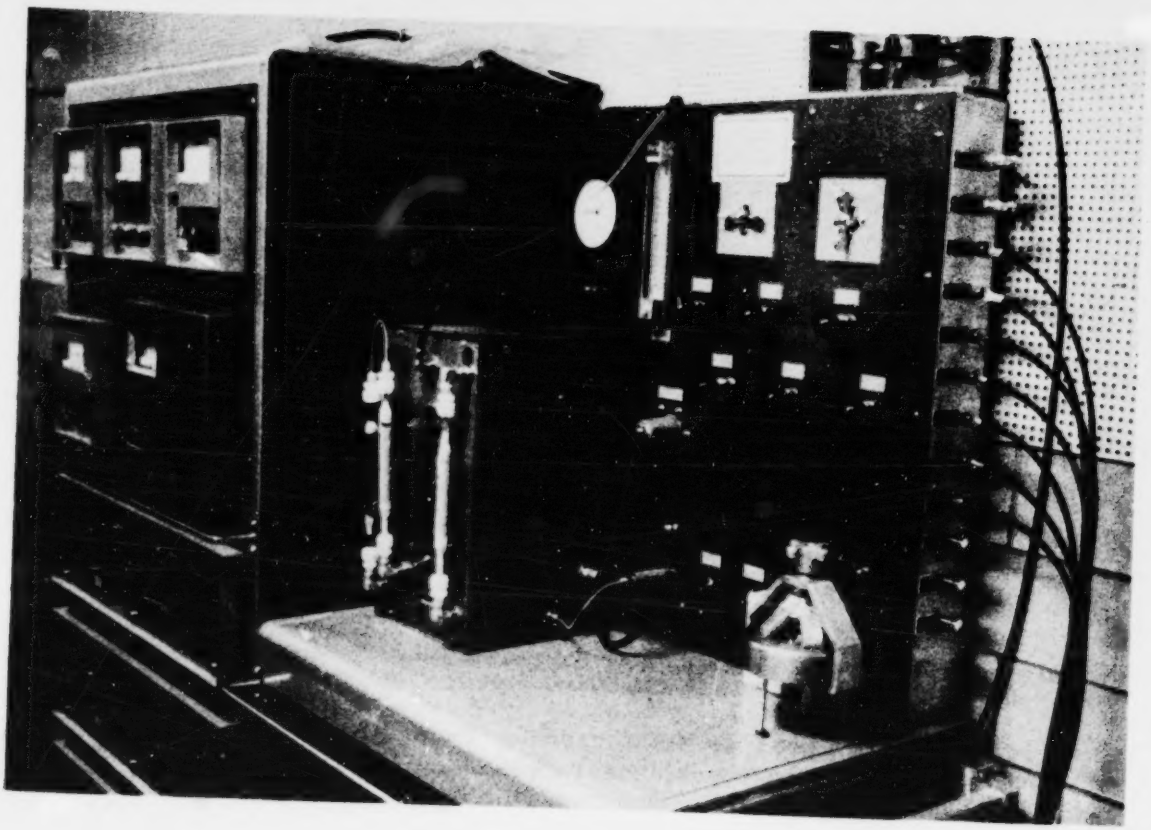


Figure A-14. Syringe sample for NOx analysis being extracted from sample bag. Note B & L spectrophotometer in background.

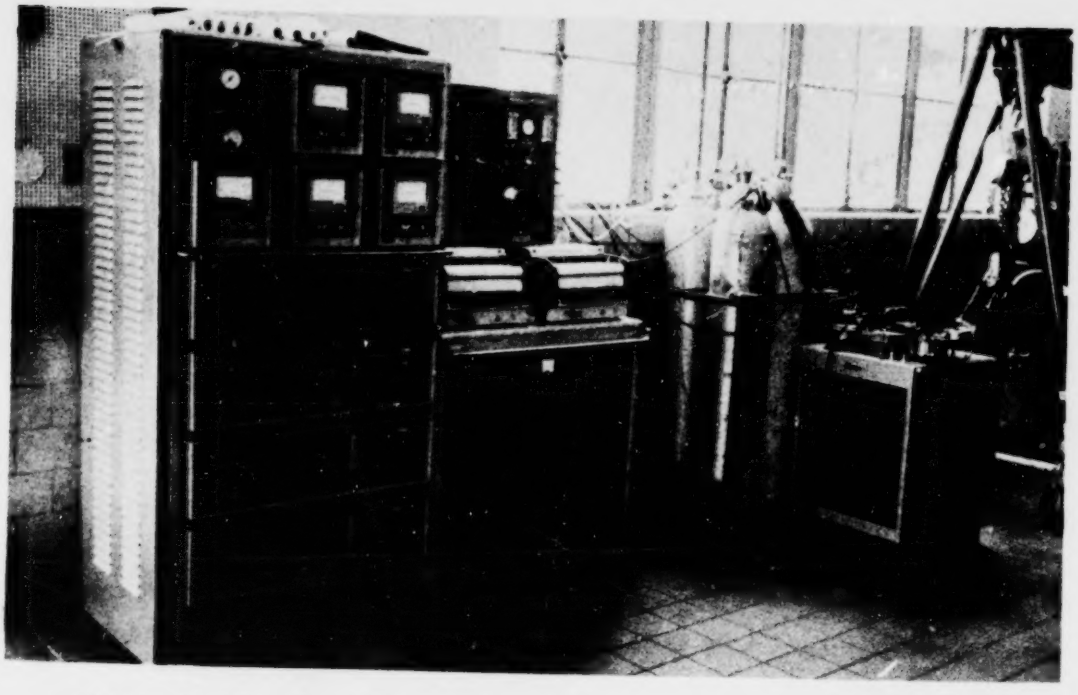


Figure A-15. Console No. 6 used for recording California-cycle emissions. "Sample prep" cart and span-gas cylinders are at right of console.

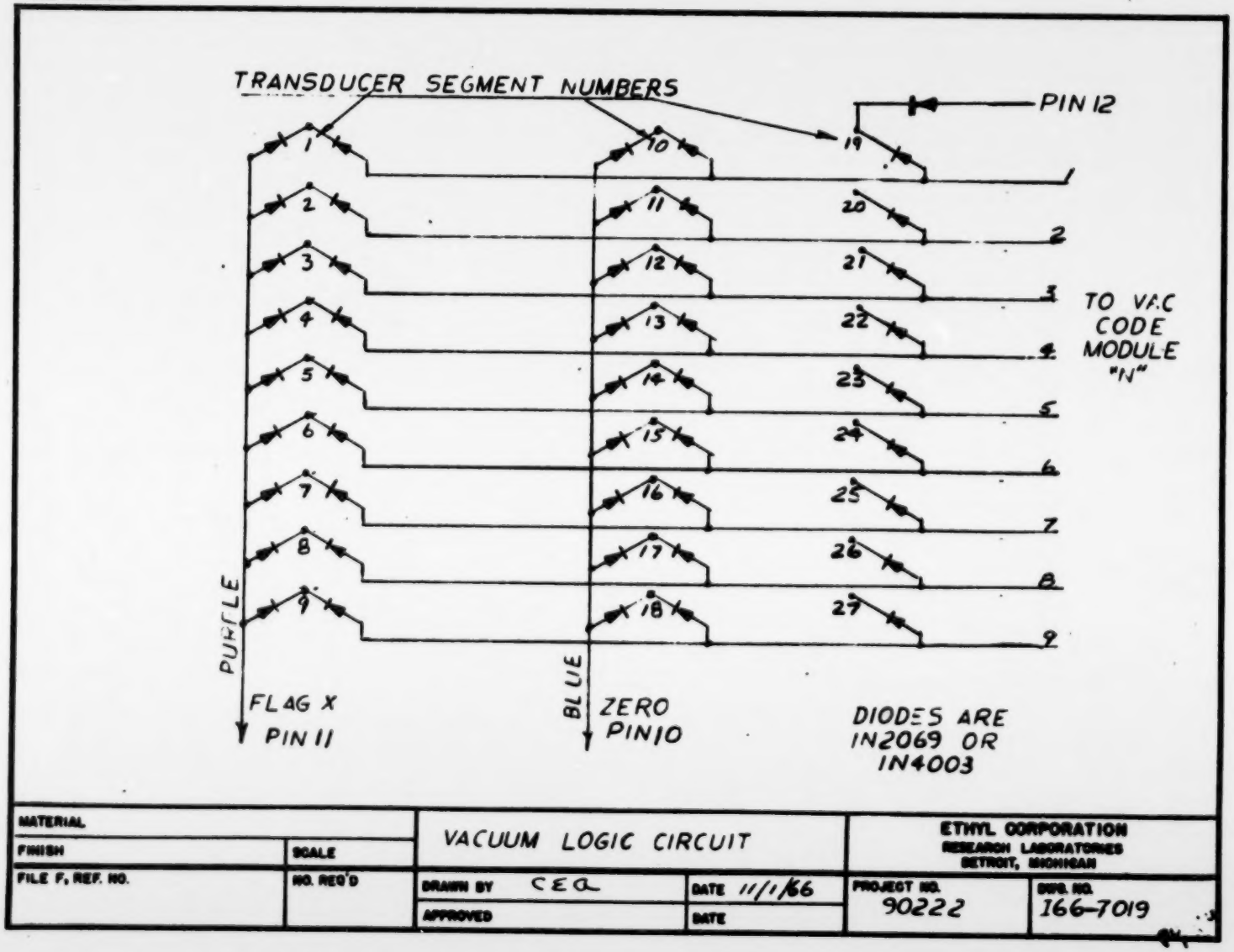


Figure A-16. Wiring diagram of circuit modifications.

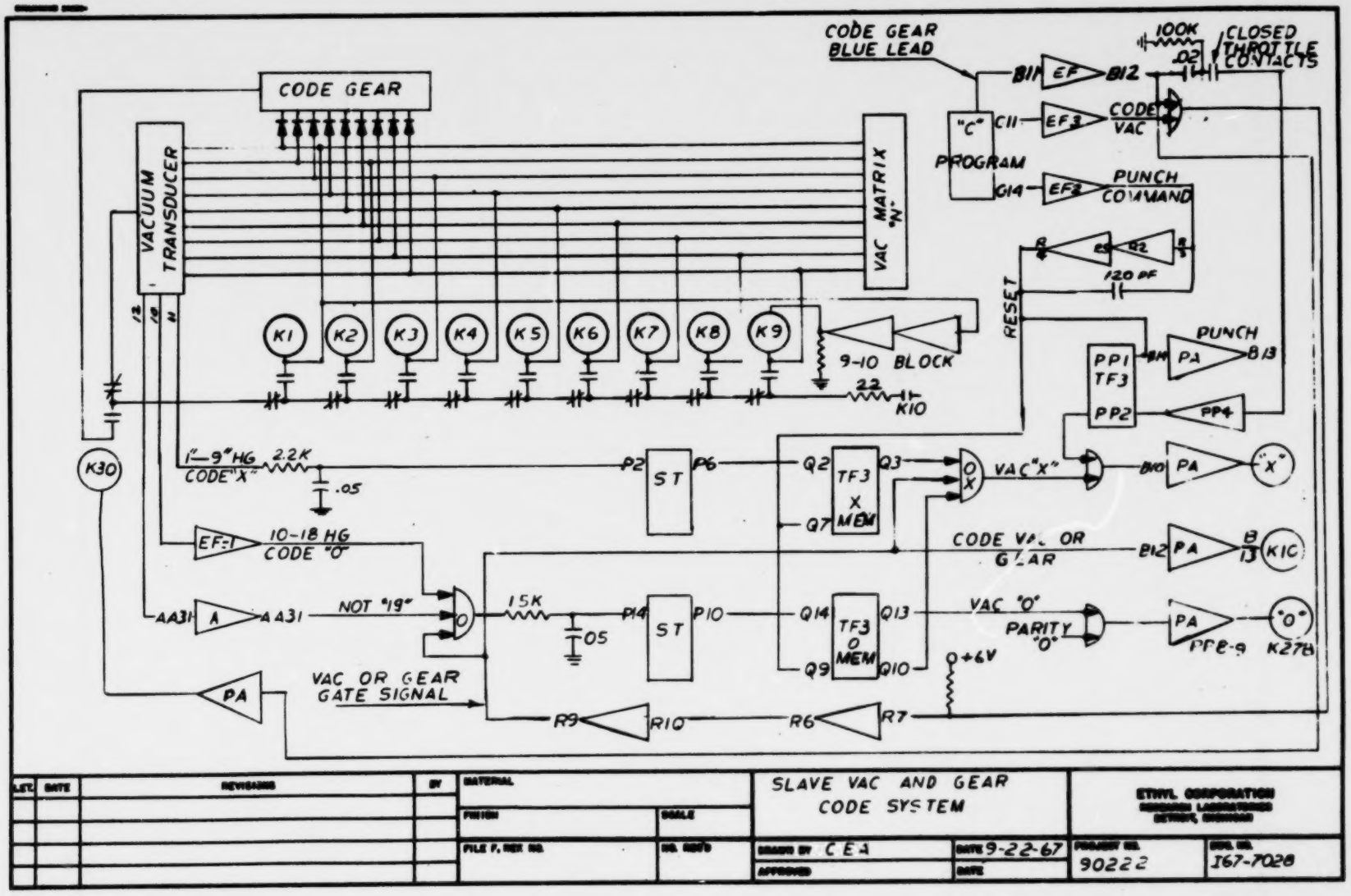


Figure A-17. Wiring diagram of circuit modifications.

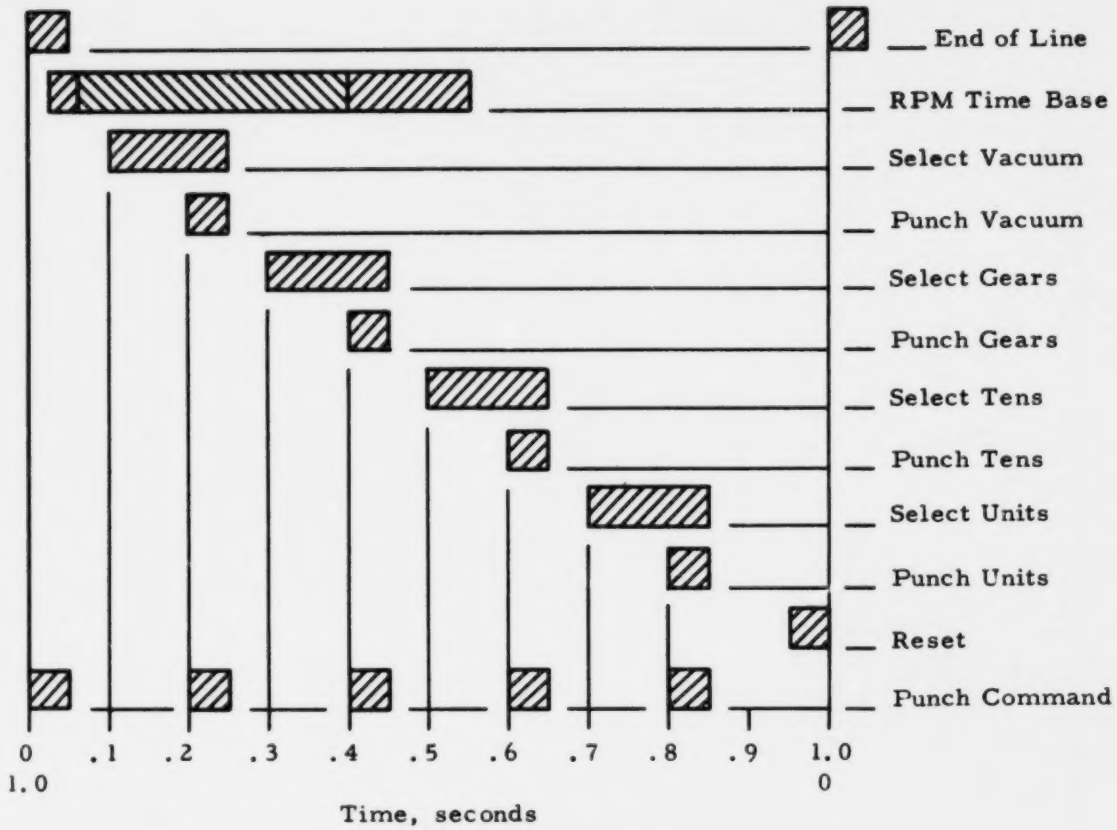


Figure A-18. Tape-punching program sequence of modified SLAVE units.

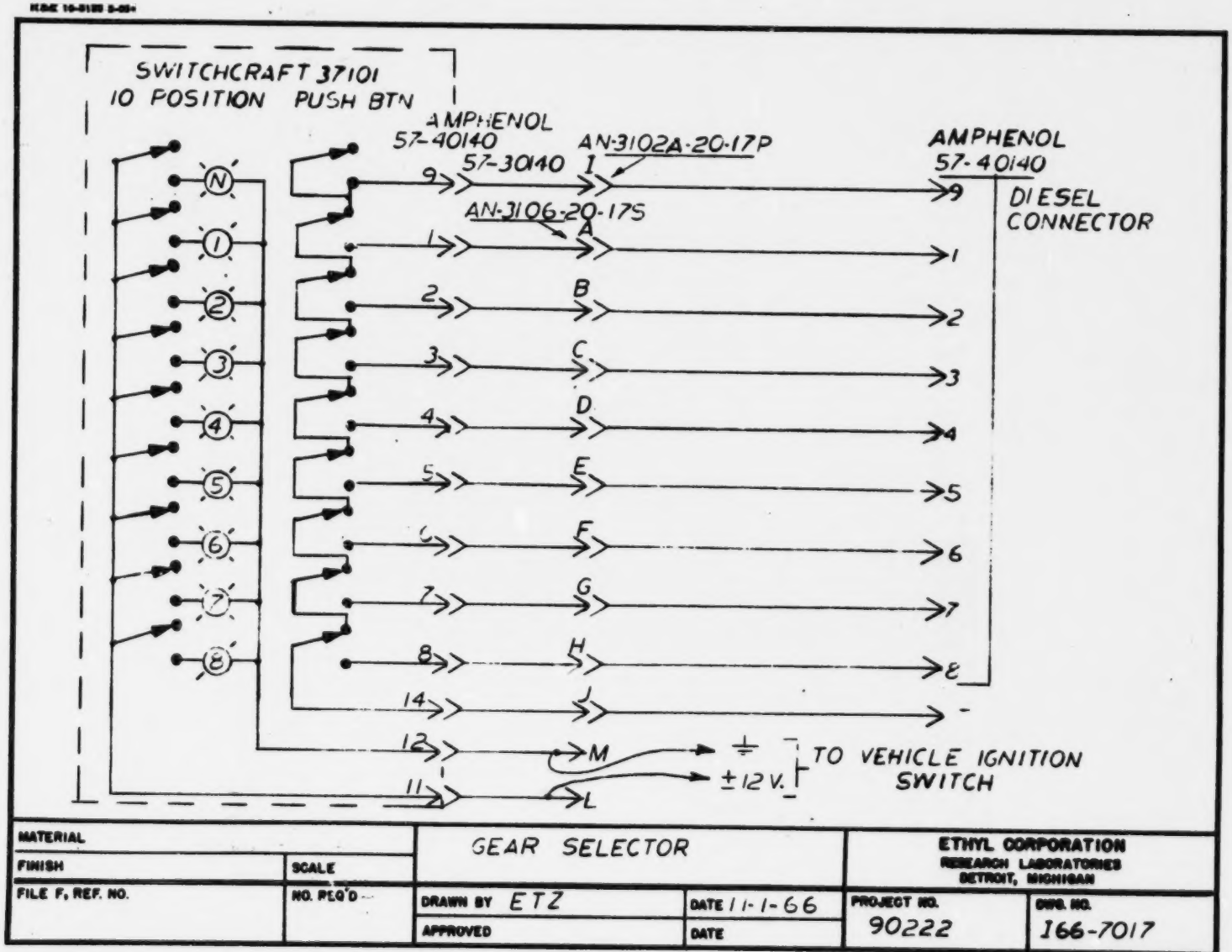


Figure A-19. Wiring diagram of gear indicator.

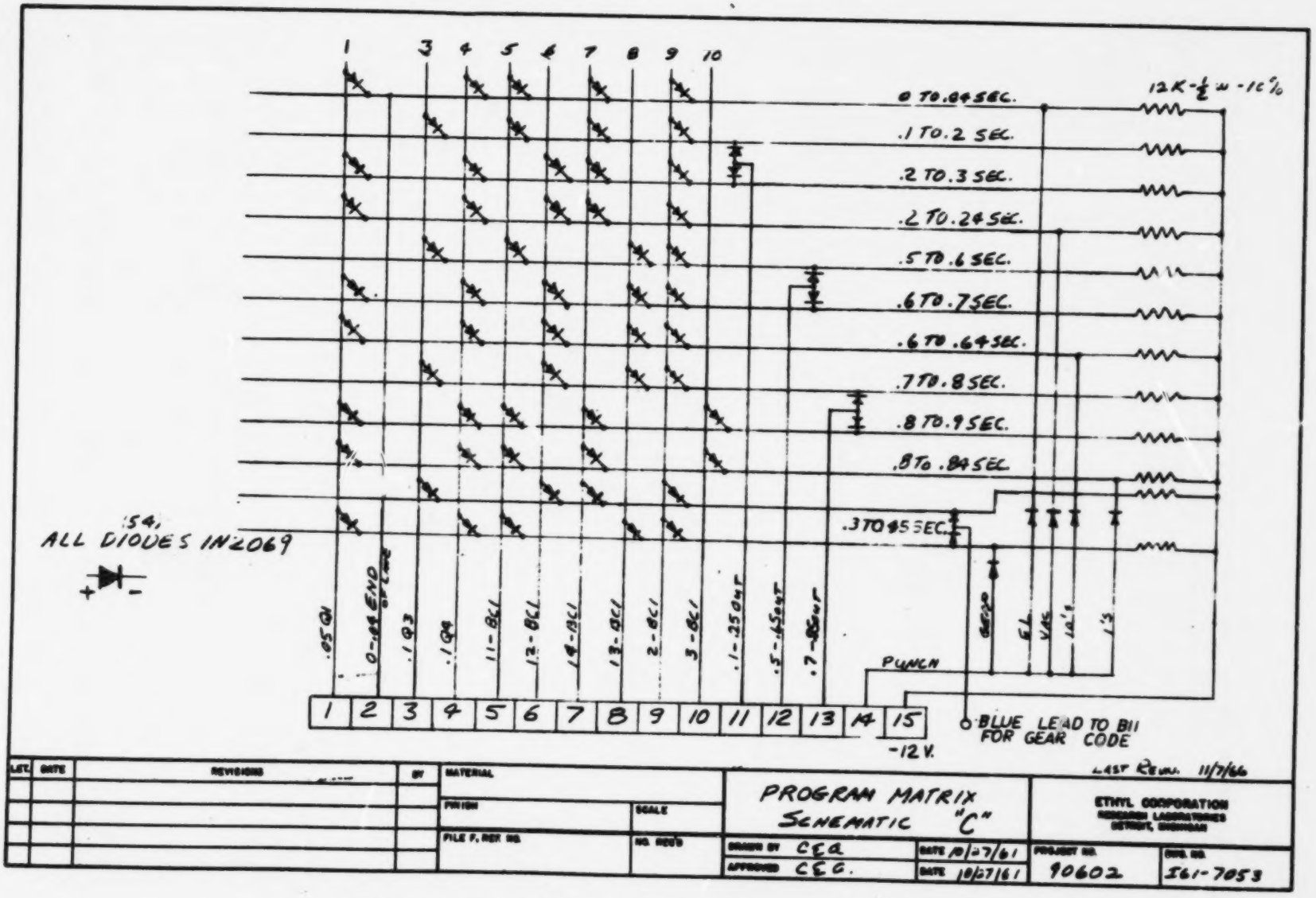


Figure A-20. Wiring diagram of program matrix.

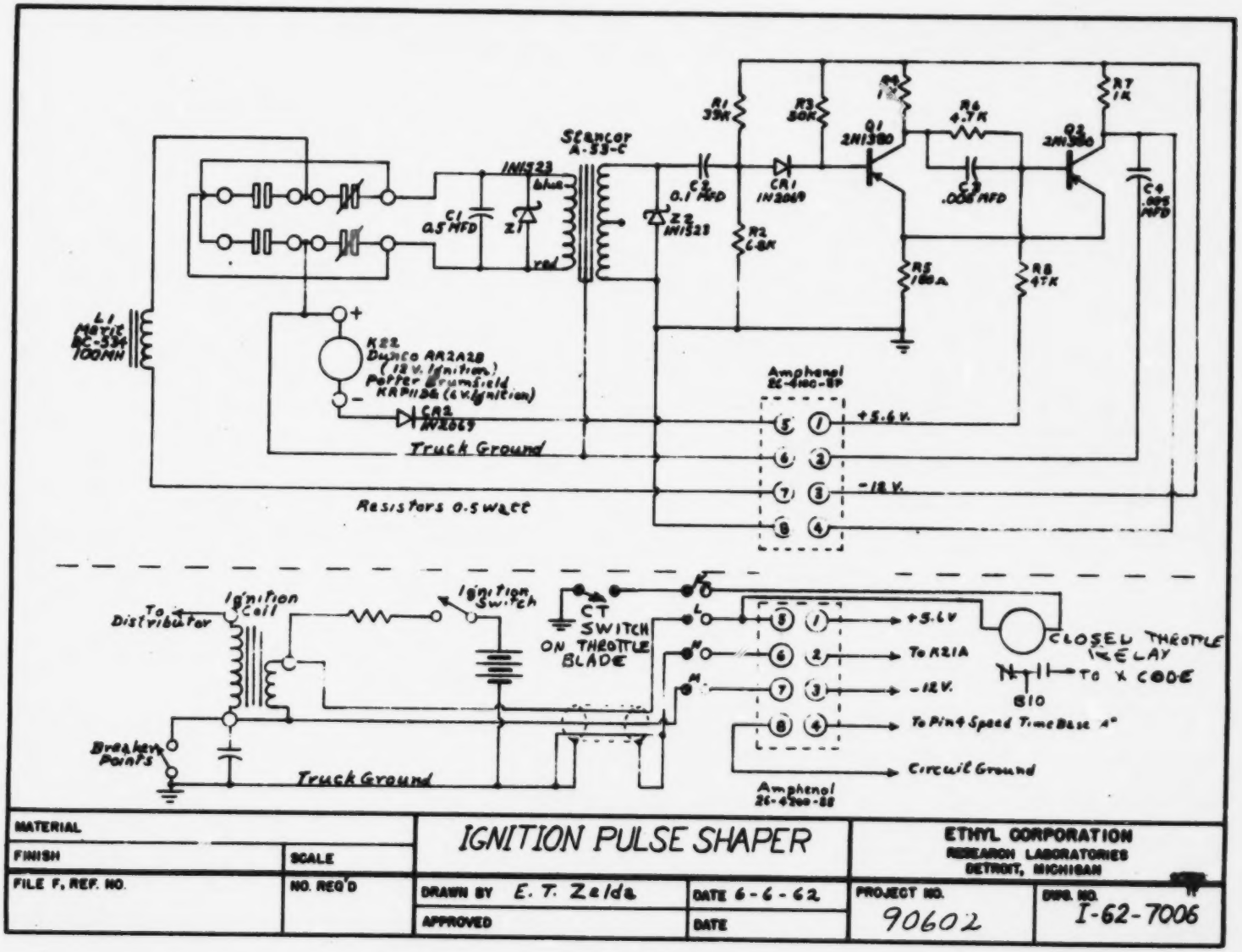


Figure A-21. Wiring diagram showing hookup for closed-throttle indication.

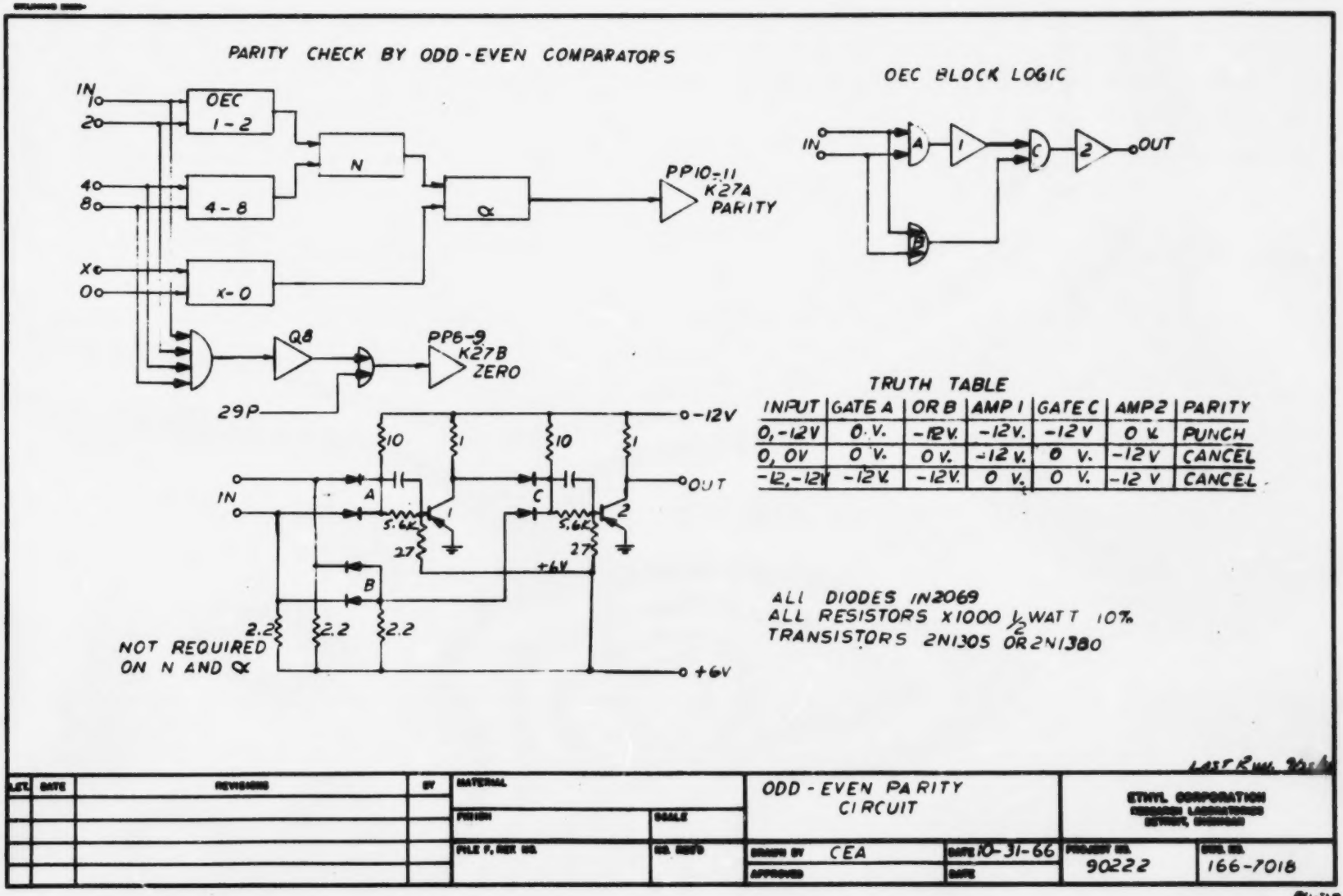


Figure A-22. Wiring diagram of parity circuit.

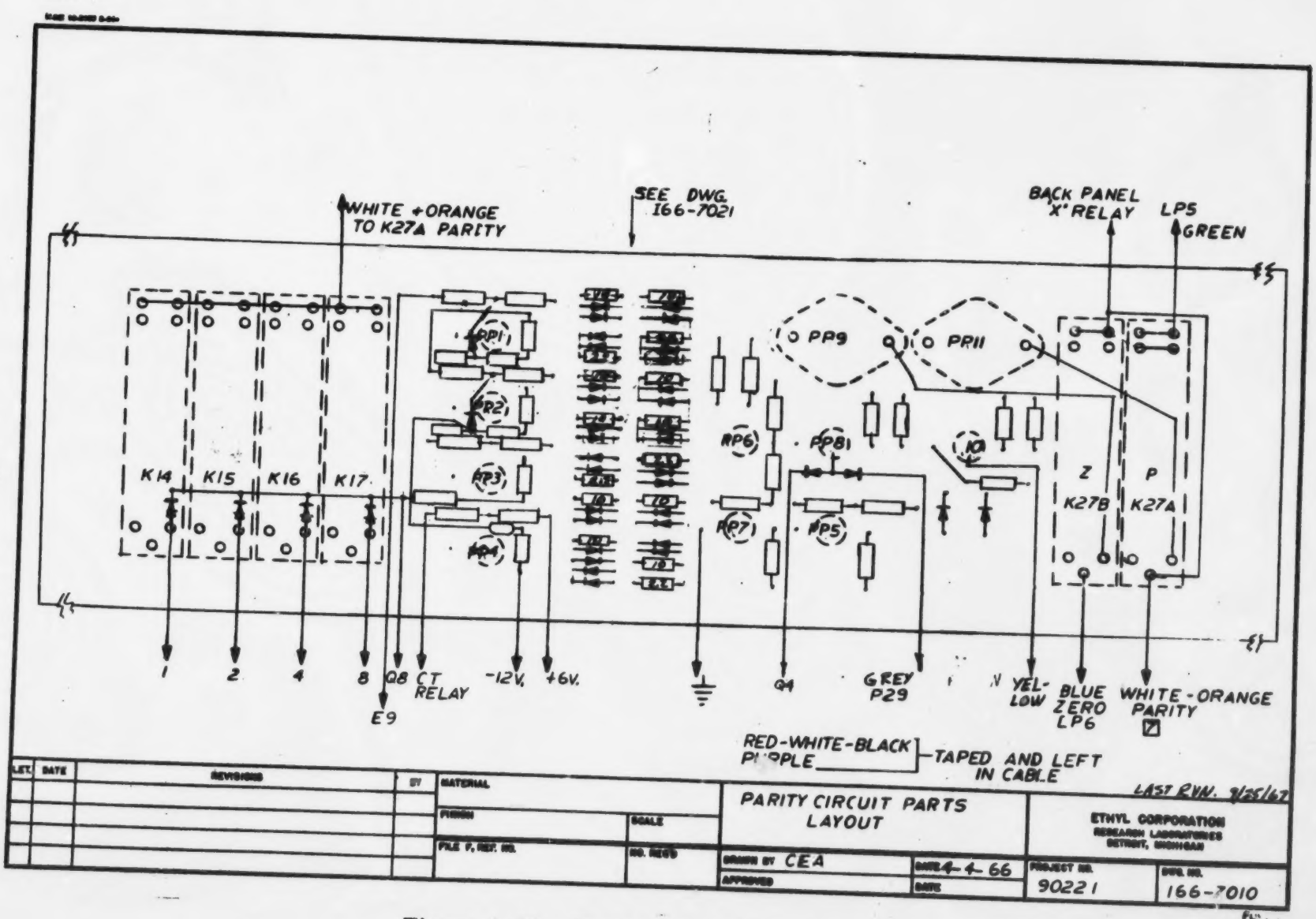


Figure A-23. Parts layout of parity circuit.

Table A-1

DRIVING PATTERN FOR DLA ROAD ROUTE -- GROUP I TRUCKS

Route Leg	Segment	No. Stops W/ 10-Sec. Idle	Max. Speed, mph	Remarks
START Coolidge at 11 Mile Road				Start on green light
Coolidge	11 Mi Rd to 12 Mi Rd	2	25	Accel-decel 20-25 mph
12 Mile Road	Coolidge to Greenfield	2	25	Accel-decel 20-25 mph
12 Mile Road	Greenfield to Southfield	2	25	Accel-decel 20-25 mph
Southfield	12 Mi Rd to 13 Mi Rd	0	30	Accel-decel 25-30 mph
13 Mile Road	Southfield to Lahser	2	25	Accel-decel 20-25 mph
Lahser	13 Mi Rd to 12 Mi Rd	0	25	Cruise
12 Mile Road	Lahser to Telegraph	0	25	Cruise, except full throttle up first hill
END at trailer park				No idle

Notes:

Accelerate in second gear at full throttle; all other accels at part throttle

Decelerate at closed throttle during accel-decel

Decelerate at part throttle when approaching signal lights

Table A-2

DRIVING PATTERN FOR DLA ROAD ROUTE -- GROUP II TRUCKS

Route Leg	Segment	No. Stops W/ 10-Sec. Idle	Max. Speed, mph	Remarks
START Coolidge at 11 Mile Road				Start on green light
Coolidge	11 Mi Rd to 12 Mi Rd	2	25	Accel-decel 20-25 mph
12 Mile Road	Coolidge to Greenfield	2	25	Accel-decel 20-25 mph
12 Mile Road	Greenfield to Southfield	2	25	Accel-decel 20-25 mph
Southfield	12 Mi Rd to 13 Mi Rd	0	30	Accel-decel 25-30 mph
13 Mile Road	Southfield to Evergreen	0	30	WOT accel-decel 25-30 mph
13 Mile Road	Evergreen to Lahser	2	30	Cruise. Cruise at WOT up hill by riding brake
Lahser	13 Mi Rd to 12 Mi Rd	0	30	Cruise
12 Mile Road	Lahser to Telegraph	0	30	Cruise. Cruise at WOT up hills by riding brake
END at trailer park				No idle

Notes:

Accelerate in intermediate gear at WOT to max speed; all other accels at part throttle

Decelerate at closed throttle during accel-decel

Decelerate at part throttle when approaching signal lights

All decelerations in top gear

Table A-3

DRIVING PATTERN FOR DLA ROAD ROUTE -- GROUP III TRUCKS

Route Leg	Segment	No. Stops W/ 15-Sec. Idle	Max. Speed, mph	Remarks
START Coolidge at 11	Mile Road			Start on green light
Coolidge	11 Mi Rd to 12 Mi Rd	2	25	Normal driving, closed-throttle decels
12 Mile Road	Coolidge to Greenfield	2	25	Normal driving, closed-throttle decels
12 Mile Road	Greenfield to Southfield	0	35	Part-throttle accel/closed-throttle decel, 30-35 mph
Southfield	12 Mi Rd to 13 Mi Rd	0	35	Part-throttle accel/closed-throttle decel, 30-35 mph
13 Mile Road	Southfield to Evergreen	0	35	Part-throttle accel/closed-throttle decel, 30-35 mph
13 Mile Road	Evergreen to Lahser	0	35	Part-throttle accel/closed-throttle decel, 30-35 mph; closed throttle accel into dip, then WOT cruise riding brake out
Lahser	13 Mi Rd to 12 Mi Rd	0	30	Cruise; closed-throttle decel to 25 mph in dip, then WOT accel out
12 Mile Road	Lahser to Telegraph	0	30	Closed-throttle accel to 35 mph into first two dips, then WOT cruise out
END at trailer park				No idle

Notes: Part-throttle decels at all lights starting 12 Mi Rd at Southfield; must stop at least three of six lights
Accelerate at WOT in all intermediate gears
Accelerate at part throttle in top gear

Table A-4

DRIVING PATTERN FOR DLA ROAD ROUTE -- GROUP IV TRUCKS

Route Leg	Segment	No. Stops W/ 10-Sec. Idle	Max. Speed, mph	Remarks
START 12 Mile Road at Coolidge				Start on green light
12 Mile Road	Coolidge to Greenfield	0	25	Cruise
12 Mile Road	Greenfield to Southfield	0	30	Accel-decel 20-30 mph
Southfield	12 Mi Rd to 13 Mi Rd	0	30	Accel-decel 20-30 mph
13 Mile Road	Southfield to Evergreen	0	25	Cruise
13 Mile Road	Evergreen to Lahser	0	30	Accel-decel 25-30 mph
Lahser	13 Mi Rd to 12 Mi Rd	0	30	Cruise
12 Mile Road	Lahser to Telegraph	0	30	Accel-decel 25-30; closed-throttle accel down first hill, brake to 25 mph, then WOT decel up
Telegraph	12 Mi Rd to NW Freeway	0	30	1-minute idle at trailer park, then cruise to freeway
Northwest Freeway	Telegraph to Lahser Exit	0	Max.	WOT cruise, then closed-throttle decel up Lahser ramp
END top of Lahser exit ramp				

Notes: Part-throttle accels in second gear to 3000 rpm
WOT accels in third gear
Other accels not specified

Table A-5

COMPARISON OF AVERAGE LOS ANGELES MODE DATA WITH DETROIT (DLA) MODE DATA FROM MEDIAN TRUCKS

"Olds" SLAVE -- Percent Mode Operation on Engine Revolution Basis

	Group I		Group II		Group III		Group IV	
	LA*	DLA#	LA*	DLA#	LA*	DLA#	LA*	DLA#
Idle (IDL)	7.1	7.96	7.3	6.70	7.3	7.30	4.8	5.70
Part-Throttle Cruise (CRU)	32.8	33.30	25.9	31.71	27.9	33.82	34.6	35.79
Full-Throttle Cruise (FTC)	1.8	0.88	2.7	0.11	5.4	4.88	11.4	7.96
Part-Throttle Accel (PTA)	19.9	22.69	18.7	21.72	15.8	9.59	12.5	8.47
Full-Throttle Accel (FTA)	10.3	8.26	15.3	10.92	17.4	17.59	14.5	17.54
Part Throttle Decel (MDE)	9.5	6.22	8.3	7.06	6.2	6.28	6.3	5.72
Full-Throttle Decel (HDE)	16.8	19.06	19.4	20.72	17.4	17.61	13.3	16.55
Closed-Throttle Accel (CTA)	0.8	1.12	0.8	0.53	1.0	1.05	1.0	0.55
Full-Throttle Decel (FTD)	0.9	0.52	1.6	0.54	1.6	1.89	1.5	1.71
Average Speed, mph	18.0	20.20	19.6	20.20	20.2	20.20	19.9	21.80

*LA data -- average from all trucks in weight group (see Ethyl report No. GR 63-24)

#DLA data -- single run from median truck in weight group (data extracted from computer print-outs, Appendix C, runs 1R101212, 2R101808, 3R111009, and 4R100411)

Table A-6

COMPARISON OF AVERAGE LOS ANGELES MODE DATA WITH DETROIT (DLA) AND PONTIAC (PLA) MODE DATA FROM GROUP II AND III MEDIAN TRUCKS

"Old" SLAVE -- Percent Mode Operation on Engine Revolution Basis

	Group II			Group III		
	LA	DLA	PLA*	LA	DLA	PLA*
Idle (IDL)	7.3	6.70	8.27	7.3	7.30	10.60
Part-Throttle Cruise (CRU)	25.9	31.71	23.52	27.9	33.82	25.74
Full-Throttle Cruise (FTC)	2.7	0.11	0.77	5.4	4.88	3.47
Part-Throttle Accel (PTA)	18.7	21.72	19.96	15.8	9.59	16.22
Full-Throttle Accel (FTA)	15.3	10.92	15.81	17.4	17.59	19.20
Part-Throttle Decel (MDE)	8.3	7.06	10.35	6.2	6.28	5.39
Full-Throttle Decel (HDE)	19.4	20.72	20.13	17.4	17.61	17.33
Closed-Throttle Accel (CTA)	0.8	0.53	0.37	1.0	1.05	0.57
Full-Throttle Decel (FT	1.6	0.54	0.83	1.6	1.89	1.47
Average Speed, mph	19.6	20.20	19.76	20.2	20.20	18.20

* PLA data -- single runs from median truck in weight group (data extracted from computer print-outs, Appendix C, "old" SLAVE runs 104-3P and 103-2P); LA and DLA data from sources referenced in footnote, Table A-5

Table A-7

COMPARISON OF EMISSION AND VEHICLE PARAMETER DATA FROM DETROIT (DLA) AND PONTIAC (PLA) ROAD ROUTES

Group II and III Median Trucks

	Group II*		Group III#	
	DLA	PLA	DLA	PLA
	(Emission Concentrations, N_2-Scaled Data)			
HC, ppmC --				
Total (IR)	8442	7928	5338	5680
Total (FID)	13,104	12,876	8976	9420
Olef. (FID)	2536	2470	2125	2386
Arom. (FID)	3308	3568	2697	2537
Paraf. (FID)	7261	6838	4154	4496
NO_x, ppm	1707	1224	2274	2158
CO, vol%	2.53	3.82	1.85	1.99
CO_2, vol%	12.23	11.40	12.54	12.39
	(Mass Emissions, N_2-Scaled Data)			
HC, lb/mi -				
Total (IR)	0.0280	0.0272	0.0310	0.0449
Total (FID)	0.0435	0.0442	0.0521	0.0745
Olef. (FID)	0.0084	0.0085	0.0124	0.0189
Arom. (FID)	0.0098	0.0111	0.0145	0.0183
Paraf. (FID)	0.0252	0.0246	0.0253	0.0373
NO_x, lb/mi	0.0188	0.0139	0.0438	0.0567
CO, lb/mi	0.1697	0.2658	0.2172	0.3180
CO_2, lb/mi	1.2892	1.2420	2.3126	3.1110
	(Vehicle Parameters)			
A/F	13.33	12.79	13.62	13.56
Air, SCF/mi	96.6	98.7	170.0	231.3
Exhaust, SCF/mi	92.3	95.4	161.4	219.9
Avg. Speed, mph	20.7	19.3	19.3	18.2

* GMC-1 median truck. DLA values are averages from runs 104-1 and 2 (Tables VII-2 and VII-20); PLA values are averages from runs 104-3 and 9 (Table A-13, this appendix)

Ford-3 median truck. DLA values are averages from runs 103-5 and 6 (Tables VII-8 and VII-23); PLA values are averages from runs 103-2 and 3 (Table A-14, this appendix)

Table A-8

COMPARISON OF "NEW" SLAVE MODE DATA FROM DETROIT (DLA) AND PONTIAC (PLA) ROAD ROUTES

Group II and III Median Trucks

	Group II*		Group III#	
Percent Time in	DLA	PLA	DLA	PLA
IDL	19.75	18.53	18.45	21.14
CRU	20.19	18.89	26.90	22.37
ACC	29.72	31.58	28.30	30.80
DEC	30.34	31.00	26.33	25.68
Pct. Cat. to Cat. Change				
IDL to ACC	7.76	8.84	8.78	10.79
CRU to ACC	2.94	4.82	5.10	2.49
CRU to DEC	6.92	6.83	8.98	7.88
ACC to CRU	5.45	7.23	5.80	6.22
ACC to DEC	34.80	32.53	29.93	31.95
[illegible]C to IDL	7.96	8.43	8.60	11.20
[illegible]EC to CRU	4.61	4.82	8.07	3.73
DEC to ACC	29.35	26.10	22.72	24.90
Percent Time at				
FP	9.5	12.3	28.7	28.5
PT	43.5	44.1	30.3	27.3
DP	8.7	5.8	4.5	6.2
CT	38.4	37.9	36.4	38.0
Average Engine RPM	1120	1116	1318	1407

* GMC-1 median truck. DLA values are averages from runs 6-1 and 6-2 (Table VII-29); PLA values are from single run (Appendix C, run 104-3P)

\# Ford-3 median truck. DLA values are averages from runs 33-1 and 2 (Table VII-31); PLA values are from single run (Appendix C, run 103-2P)

Table A-9

PRESSURE DROPS ACROSS AIR CLEANER ASSEMBLIES

Standard and Modified Units with Laminar Flow Elements

Air Cleaner No.	Configuration	ΔP, inches H_2O @ Air Flow, cfm							Mask Opening, sq. in.
		50	100	150	200	250	300	350	
C-1	Std.	1.50	5.40	11.80	20.90				
	Mod.	1.55	5.30	11.40	18.90				8.00
C-2	Std.	0.70	2.20	4.60	7.80	12.10	18.10		
	Mod.	0.90	2.50	5.00	8.20	12.10	17.80		4.87
C-3	Std.	0.55	1.70	3.50	6.00	9.60	13.90		
	Mod.	0.70	1.90	3.80	5.90	8.60	12.10		8.00
C-4	Std.	0.25	0.80	1.80	3.10	4.80	7.10	9.60	
	Mod.	0.50	1.20	2.30	3.55	5.15	7.20	9.20	None
D-1	Std.	0.65	1.50	2.60	4.25	6.50	9.50		
	Mod.	0.55	1.50	3.00	5.00	7.45	10.20		10.00
D-2	Std.	0.50	1.30	2.80	5.00	8.00	11.80		
	Mod.	0.65	1.55	2.80	5.00	8.00	11.20		8.00
F-1	Std.	0.25	0.65	1.80	3.90	6.95	10.45		
	Mod.	0.55	1.60	3.30	5.25	7.60	10.30		None
F-2	Std.	0.50	1.65	3.50	6.10	9.30	13.00		
	Mod.	0.50	1.70	3.55	6.30	9.60	13.45		6.00
F-3	Std.	1.20	3.50	6.90	12.45				
	Mod.	1.20	3.55	6.95	12.45				3.44
F-4	Std.	0.40	0.95	1.60	2.65	4.05	6.10	8.50	(Oil Bath)
	Mod.	0.50	1.20	2.20	3.40	4.75	6.50	8.75	None
F-5	Std.	0.45	1.05	1.80	2.85	4.25	6.05	8.20	(Oil Bath)
	Mod.	0.55	1.30	2.30	3.60	5.15	6.90	9.00	None
G-1	Std.	1.35	4.40	10.00	18.50	29.80	(incl. carb. restric.)		
	Mod.	1.45	4.50	10.00	18.50	29.00			None
I-1	Std.	0.60	1.60	3.60					
	Mod.	0.65	1.60	4.10					None
I-2	Std.	0.46	0.98	1.62	2.48	3.60	5.00	6.50	(Oil Bath)
	Mod.	0.60	1.30	2.20	3.35	4.85	6.60	8.60	None
I-3	Std.	0.88	2.02	3.44	5.00	6.63	8.65	11.25	(Oil Bath)
	Mod.	0.70	1.90	3.60	5.80	8.60	12.75	16.00	None

Table A-10

DETAILS OF ANALYZERS IN CONSOLE NO. PHS 3875

Used to Analyze Bag Samples

Flame Ionization Detector

Make and Model	Beckman 108A
Calibrated Range	0-3200 ppmC
Burner Flow-Air	260 cc/min.
Burner Flow-Fuel	65 cc/min.
Burner Flow-Sample	3.8 cc/min.
Fuel Type	40% hydrogen + 60% nitrogen

Non-dispersive Infrared Analyzers

	Beckman IR315		
Sensitized to	HC	CO	CO_2
Calibrated Range	0-3200 ppmC	0-3.5 vol%	0-6 vol%
Cell Length-Sample	13.5 in.	0.188 in.	0.125 in.
Cell Length-Filter	1.5 in. (Dry CO_2)	None	None
Cell Length-Reference	15.25 in.	0.188 in.	0.125 in.
Sample Flow Rate	2.4 cu. ft./hour to all		
Sample Pressure	14 oz./sq. in. to all		

Oxygen Analyzer

Make and Model	Beckman 778
Type	Polarographic
Calibrated Range	0-5 vol%

Note: HC analyzers calibrated and normalized on butane-nitrogen blends

Table A-11

DETAILS OF NDIR ANALYZERS
IN ETHYL CONSOLE NO. 6

Used for California-Cycle Chart Recordings

	HC (Low)	HC (High)	CO	CO_2
Make and Model	---------- Beckman IR315 ----------			
Calibrated Range	0-6900 ppmC	0-66,000 ppmC	0-10.5 vol%	0-17 vol%
Cell Length-Sample	13.5 in.	1.25 in.	0.188 in.	0.125 in.
Cell Length-Filter	1.5 in. (Dry CO_2)	1.5 in. (Dry CO_2)	None	None
Cell Length-Reference	15.25 in.	3.0 in.	0.188 in.	0.125 in.
Sample Flow Rate	10 cu. ft./hr.	6 cu. ft./hr.	6 cu. ft./hr.	6 cu. ft./hr.

Note: Analyzer meter deflections recorded by Model PWD "Servo/Riters" (Texas Instruments Inc.)

Table A-12

MANIFOLD VACUUM CODING FOR IBM 1620 CHARACTERS

Transducer Segment	Vacuum Range, in. Hg	Character	Code	Tape Punching
1	0.00 - 1.49	J	51	XC1
2	1.50 - 2.49	K	52	XC2
3	2.50 - 3.49	L	53	X21
4	3.50 - 4.49	M	54	XC4
5	4.50 - 5.49	N	55	X41
6	5.50 - 6.49	O	56	X42
7	6.50 - 7.49	P	57	XC421
8	7.50 - 8.49	Q	58	XC8
9	8.50 - 9.49	R	59	X81
10	9.50 -10.49	/	21	OC1
11	10.50 -11.49	S	62	OC2
12	11.50 -12.49	T	63	C21
13	12.50 -13.49	U	64	OC4
14	13.50 - 14.49	V	65	O41
15	14.50 - 15.49	W	66	O42
16	15.50 - 16.49	X	67	OC421
17	16.50 - 17.49	Y	68	OC8
18	17.50 - 18.49	Z	69	O81
19	18.50 - 19.49	1	71	1
20	19.50 - 20.49	2	72	2
21	20.50 - 21.49	3	73	C21
22	21.50 - 22.49	4	74	4
23	22.50 - 23.49	5	75	C41
24	23.50 - 24.49	6	76	C42
25	24.50 - 25.49	7	77	421
26	25.50 - 26.49	8	78	8
27	26.50 - up	9	79	C81
Data ender		0	70	0

Table A-13

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 2 PONTIAC ROAD 1967 HALF LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
104-3	GMC	8374	13160	2102	3799	7260	1337	3.31	11.53	.0282	.0443	.0071	.0116	.0256	.0149	.2252	1.232
104-9	GMC	7482	12593	2838	3339	6416	1112	4.33	11.27	.0262	.0441	.0099	.0106	.0235	.0129	.3063	1.252
AVERAGE		7928	12876	2470	3568	6838	1224	3.82	11.40	.0272	.0442	.0085	.0111	.0246	.0139	.2658	1.242
CONF. LIM.		2261	9274	-2205	639	1476	-204	-2.66	9.75	.0145	.0429	-.0093	.0047	.0112	.0012	-.2495	1.115
		TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
		13594	16478	7145	6497	12199	2653	10.30	13.05	.0399	.0455	.0263	.0175	.0379	.0266	.7810	1.369
STD. DEV.		630	400	520	325	596	159	.72	.18	.0014	.0001	.0020	.0007	.0015	.0014	.0573	.014

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
104-3	GMC	8984	14119	2255	4075	7789	1435	3.55	12.37	.0302	.0475	.0076	.0124	.0275	.0160	.2416	1.321
104-9	GMC	7801	13130	2959	3481	6690	1159	4.52	11.75	.0273	.0459	.0103	.0110	.0245	.0135	.3194	1.305
AVERAGE		8392	13624	2607	3778	7239	1297	4.04	12.06	.0288	.0467	.0090	.0117	.0260	.0148	.2805	1.313
CONF. LIM.		876	7341	-1865	4	257	-456	-2.13	8.12	.0103	.0365	-.0082	.0028	.0069	-.0011	-.2138	1.211
		TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
		15908	19907	7079	7551	14221	3050	10.20	16.00	.0472	.0569	.0261	.0206	.0451	.0306	.7748	1.415
STD. DEV.		836	699	497	420	777	195	.69	.44	.0021	.0011	.0019	.0010	.0021	.0018	.0550	.011

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
104-3	GMC	305 V-6	7500	1.81	13.09	12.45	12.76	12.96	85	47543	97.2	93.5	19.8	18.8
104-9	GMC	305 V-6	7500	1.61	12.67	12.29	12.48	12.59	107	47501	100.1	97.3	18.9	11.4
AVERAGE				1.71	12.88	12.37	12.62	12.79	96	47522	98.7	95.4	19.3	15.1
CONF. LIM.				.44	10.27	11.35	10.84	10.31	-43	47267	80.2	71.3	13.9	-31.9
				TO	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO
				2.98	15.48	13.39	14.40	15.26	235	47776	117.1	119.5	24.8	62.1
STD. DEV.				.14	.29	.11	.20	.28	15	28	2.1	2.7	.6	5.2

Table A-14

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

WEIGHT CLASS 3 PONTIAC ROAD 1967 HALF LOAD DATA

EFFLUENT VARIABLES ..... NITROGEN-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
103-2	FORD	5362	8748	2288	2288	4171	2185	1.95	12.39	.0425	.0694	.0181	.0165	.0347	.0575	.3133	3.120
103-3	FORD	5999	10093	2484	2787	4822	2132	2.02	12.38	.0473	.0796	.0196	.0201	.0399	.0558	.3227	3.101
AVERAGE		5680	9420	2386	2537	4496	2158	1.99	12.39	.0449	.0745	.0189	.0183	.0373	.0567	.3180	3.111
CONF. LIM.		1633 TO 9727	875 TO 17965	1140 TO 3631	-632 TO 5707	360 TO 8632	1821 TO 2495	1.54 TO 2.43	12.32 TO 12.45	.0144 TO .0754	.0097 TO .1393	.0093 TO .0284	-.0046 TO .0412	.0043 TO .0703	.0458 TO .0675	.2583 TO .3777	2.990 TO 3.231
STD. DEV.		450	951	138	352	460	37	.05	.01	.0034	.0072	.0011	.0025	.0037	.0012	.0066	.013

EFFLUENT VARIABLES ..... CO/CO2-SCALED DATA

RUN NO.	TRUCK MAKE	IR PPMC	FID PPMC	OLEF PPMC	AROM PPMC	PAR PPMC	NOX PPM	CO PCT	CO2 PCT	IR LB/MI	FID LB/MI	OLEF LB/MI	AROM LB/MI	PAR LB/MI	NOX LB/MI	CO LB/MI	CO2 LB/MI
103-2	FORD	5721	9335	2442	2442	4451	2331	2.09	13.22	.0454	.0740	.0193	.0176	.0370	.0614	.3343	3.329
103-3	FORD	6394	10759	2648	2970	5140	2273	2.16	13.20	.0504	.0849	.0209	.0215	.0425	.0595	.3440	3.306
AVERAGE		6057	10047	2545	2706	4795	2302	2.13	13.21	.0479	.0795	.0201	.0196	.0398	.0605	.3392	3.318
CONF. LIM.		1781 TO 10333	1000 TO 19093	1236 TO 3853	-648 TO 6060	418 TO 9172	1933 TO 2670	1.68 TO 2.57	13.08 TO 13.34	.0161 TO .0797	.0102 TO .1487	.0099 TO .0303	-.0052 TO .0443	.0048 TO .0747	.0484 TO .0725	.2775 TO .4008	3.172 TO 3.463
STD. DEV.		475	1006	145	373	487	41	.05	.01	.0035	.0077	.0011	.0028	.0039	.0013	.0069	.016

RUN NO.	MAKE	ENGINE TYPE	GVW LB	O2 PCT	A/F CO	A/F CO2	A/F AVE	A/F CO/CO2	CARB TEMP	ODOM MILES	.SCF/MILE.. AIR	EXH	MPH	PCT AIR
103-2	FORD	330 V-8	20000	2.53	13.63	13.16	13.39	13.57	61	2647	231.9	220.5	18.2	16.2
103-3	FORD	330 V-8	20000	2.35	13.60	13.15	13.38	13.54	57	2656	230.6	219.3	18.3	16.2
AVERAGE				2.44	13.62	13.16	13.39	13.56	59	2651	231.3	219.9	18.2	16.2
CONF. LIM.				1.30 TO 3.58	13.42 TO 13.81	13.09 TO 13.22	13.32 TO 13.45	13.36 TO 13.75	33 TO 84	2594 TO 2708	223.0 TO 239.5	212.3 TO 227.5	17.4 TO 19.1	16.2 TO 16.2
STD. DEV.				.13	.02	.01	.01	.02	2	6	.9	.8	.1	.0

APPENDIX B

Run Summaries From Emission Tests

This appendix contains computer print-outs of run summaries of each individual test in which the proportional sampler was used. Information in these summaries was developed directly from the raw data recorded during mechanical inspections and at the time the emission test was performed. Items of interest logged in the tables but not found elsewhere in the report include:

Date and time of test
Identification of laminar flow element, carburetor, and distributor
Ambient weather conditions
Vehicle mileage
Pertinent vehicle and engine details
Observed engine idle conditions
Compression pressures
Traffic conditions (1 = light, 2 = medium, 3 = heavy)

The emission and vehicle-parameter values in the run summaries are the same values used in the tables of results and ratio comparisons (Sections VII and VIII) and in the discussions of the "winter," "load-effect," and "route-development" tests covered in Section IX and Appendix A.

Run-summary tables in this appendix are grouped in numerical order by run number. Table B-1 will assist the reader in relating individual run numbers to the various road and chassis-dynamometer emission tests performed in the program. The same outline also applies to the computer print-outs of the refurbished data decks found in Appendix E (single copy bound under separate cover).

Table B-1

CROSS-REFERENCE OF RUN NUMBERS LISTED IN RUN SUMMARY TABLES

		Run Serial Number						
		Road Runs					Chassis Dyn. Runs	
			Winter DLA @ Load					
Make	No.	DLA*#	0	Half#	Full	PLA*	Cycle#	Cycle#
				(Group I)				
Chevrolet	1			4-1, 3				
Chevrolet	2			3-1, 2				
Chevrolet	3			25-1, 2				
Chevrolet	4			8-4, 5				
Dodge	1(M)		11-1, 3	9-2, 3	12-1, 2			
Ford	1			1-1, 2				
Ford	2			29-1, 2				
Ford	3			10-1, 3				
GMC	1			41-1, 2				
IHC	1			7-1, 2				
				(Group II)				
Chevrolet	1	130-4, 5		16-1, 2			230-3, 4	
Chevrolet	2	108-4, 5		46-1, 2			208-4, 5	308-6, 7
Chevrolet	3	131-2, 3		27-1, 2			231-2, 3	331-1, 2
Chevrolet	4	129-2, 3		40-2, 3			229-2, 3	
Dodge	1	123-3, 4		38-1, 2			223-1, 3	
Ford	1	125-2, 3		13-1, 2			225-1, 2	325-3, 4
Ford	2	114-1, 2		39-2, 3			214-2, 3	
Ford	3	113-1, 2		2-1, 3			213-2, 8	313-5, 6
GMC	1(M)	104-1, 2	14-1, 2	6-1, 2	15-1, 2	104-3, 9	204-2, 5	304-6, 7
IHC	1	122-2, 4		43-1, 2			222-1, 2	322-3, 4
				(Group III)				
Chevrolet	1	115-2, 3		47-1, 2			215-1, 4	
Chevrolet	2	107-1, 2		35-2, 3			207-2, 3	
Chevrolet	3	127-1, 2		44-1, 2			227-3, 4	327-1, 2
Chevrolet	4	124-1, 2		45-1, 2			224-1, 2	324-4, 5
Ford	1	105-1, 2		42-1, 2			205-3, 4	305-5, 6
Ford	2	119-1, 2		18-2, 3			219-1, 2	
Ford	3(M)	103-5, 6	31-1, 2	33-1, 2	32-1, 2	103-2, 3	203-3, 4	303-1
Ford	4	106-2, 3		34-2, 3			206-3, 4	
GMC	1	112-1, 2		37-2, 4			212-2, 3	312-1, 4
IHC	1	126-1, 2		50-1, 2			226-1, 2	326-3, 4
				(Group IV)				
Chevrolet	1(M)	101-3, 4	20-1, 2	5-2, 4	19-2, 3		201-3, 4	301-1, 2
Chevrolet	2	117-1, 2		30-8, 9			217-1, 2	
Dodge	1	128-1, 2		36-1, 3			228-1, 2	328-3, 4
Ford	1	111-1, 2		23-8, 9			211-1, 5	311-2, 3
Ford	2	116-4, 5		26-8, 9			216-2, 3	
Ford	3	110-1, 2		24-1, 2			210-4, 5	
GMC	1	121-2, 3		22-8, 9			221-1, 2	321-3, 4
IHC	1	109-3, 4		48-1, 8			209-1, 2	
IHC	2	120-3, 4		21-8, 9			220-3, 4	320-1, 2
IHC	3	118-2, 3		28-1, 8			218-1, 3	318-4

* All at 50% load

\# Same listings as shown in Table VII-1

(M) Median truck in weight group

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 1-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	66.	1.007
SAMP	2177	68.	1.000
CARB	2178	60.	1.028

ODOMETER	1124
TEST MILES	8.400
TEST MINUTES	26.92
CALC. MILES/HR	18.72
COUNT RATIO	1.000
AVE. COUNTS/MIN	270.5
CUB. FT./COUNT	.356
SCF AIR/MILE	92.2

LICENSE NO.	144BCG
MODEL YEAR	1966
ENGINE TYPE	L-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	.00/3.70
CARB. NO.	F1
DIST. NO.	F1
AIR CL. NO.	F1

DATE	10/17/66
TIME	10.10
GVW, LB	6000
LOAD, LB	1000
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	2.6

AMBIENT CONDITIONS

TEMP.	44 F
PRESSURE	29.34 IN.
HUMIDITY	93 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.850
MILES/GALLON	12.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.99
DILUTION RATIO	3.019
EXH/AIR RATIO	.962
SCF EXH/MILE	88.7
MILES/GALLON	11.5

IDLE	
DWELL ANGLE	38
IGN. TIMING	-6.0
A/F RATIO	13.0
MAN. VAC.	16.8
RPM	540

ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	43.20
ACTUAL	.00

B-3

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1040 PPMC	2964 PPMC	.0095	3140 PPMC	.0100
HC FID					
TOTAL	1933 PPMC	5509 PPMC	.0176	5836 PPMC	.0186
OLEFINS	648 PPMC	1847 PPMC	.0059	1957 PPMC	.0062
AROMAT.	252 PPMC	718 PPMC	.0018	761 PPMC	.0019
PARAFS.	1033 PPMC	2944 PPMC	.0099	3119 PPMC	.0104
NOX	473 PPM	1348 PPM	.0143	1428 PPM	.0151
CO	1.17 PCT	3.33 PCT	.2151	3.53 PCT	.2279
CO2	4.10 PCT	11.68 PCT	1.1843	12.38 PCT	1.2546
O2	.65 PCT	1.85 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	180
3	184
4	175
5	180
6	165
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 1-2

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	61.	1.024
SAMP	2230	72.	.987
CARB	2222	67.	1.003

ODOMETER	1154
TEST MILES	8.400
TEST MINUTES	26.38
CALC. MILES/HR	19.11
COUNT RATIO	1.004
AVE. COUNTS/MIN	270.5
CUB. FT./COUNT	.356
SCF AIR/MILE	92.1

LICENSE NO.	1448CG
MODEL YEAR	1966
ENGINE TYPE	L-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	.00/3.70
CARB. NO.	F1
DIST. NO.	F1
AIR CL. NO.	F1

DATE	10/17/66
TIME	1.00
GVW, LB	6000
LOAD, LB	1000
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	2.6

B-4

AMBIENT CONDITIONS

TEMP.	53 F
PRESSURE	29.34 IN.
HUMIDITY	46 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.862
MILES/GALLON	11.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.02
DILUTION RATIO	2.940
EXH/AIR RATIO	.962
SCF EXH/MILE	88.6
MILES/GALLON	11.6

IDLE	
DWELL ANGLE	38
IGN. TIMING	-6.0
A/F RATIO	13.0
MAN. VAC.	17.2
RPM	540

ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	43.20
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	990 PPMC	2834 PPMC	.0090	2911 PPMC	.0093
HC FID					
TOTAL	1883 PPMC	5390 PPMC	.0172	5537 PPMC	.0176
OLEFINS	658 PPMC	1884 PPMC	.0060	1935 PPMC	.0062
AROMAT.	356 PPMC	1019 PPMC	.0029	1047 PPMC	.0029
PARAFS.	869 PPMC	2487 PPMC	.0083	2555 PPMC	.0085
NOX	543 PPM	1554 PPM	.0164	1597 PPM	.0169
CO	1.17 PCT	3.35 PCT	.2156	3.44 PCT	.2215
CO2	4.23 PCT	12.11 PCT	1.2247	12.44 PCT	1.2580
O2	.41 PCT	1.17 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	180
3	184
4	175
5	180
6	165
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 2-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	81.	.957
SAMP	2768	80.	.960
CARB	2817	60.	1.028

ODOMETER	30171
TEST MILES	8.400
TEST MINUTES	26.14
CALC. MILES/HR	19.28
COUNT RATIO	.983
AVE. COUNTS/MIN	270.5
CUB. FT./COUNT	.356
SCF AIR/MILE	119.1

LICENSE NO.	4H5800
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	4M/
AXLE RATIO	.00/5.87
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	10/19/66
TIME	9.17
GVW, LB	10000
LOAD, LB	2420
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	6.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	43 F
PRESSURE	29.13 IN.
HUMIDITY	30 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.440
MILES/GALLON	9.4

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.16
DILUTION RATIO	2.571
EXH/AIR RATIO	.959
SCF EXH/MILE	114.2
MILES/GALLON	8.9

IDLE	
DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	18.8
RPM	540

ROUTE	ROAD-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	57.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1680 PPMC	4100 PPMC	.0168	4319 PPMC	.0177
HC FID					
TOTAL	2987 PPMC	7289 PPMC	.0299	7679 PPMC	.0315
OLEFINS	1171 PPMC	2858 PPMC	.0117	3011 PPMC	.0124
AROMAT.	476 PPMC	1162 PPMC	.0041	1224 PPMC	.0043
PARAFS.	1340 PPMC	3270 PPMC	.0141	3445 PPMC	.0148
NOX	654 PPM	1596 PPM	.0218	1681 PPM	.0229
CO	1.21 PCT	2.95 PCT	.2452	3.11 PCT	.2584
CO2	4.92 PCT	12.01 PCT	1.5667	12.65 PCT	1.6506
O2	.69 PCT	1.68 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	168
3	165
4	163
5	163
6	165
7	168
8	160

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 2-3

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	80.	.960
SAMP	2780	83.	.951
CARB	2820	74.	.980

ODOMETER	30231
TEST MILES	8.400
TEST MINUTES	25.70
CALC. MILES/HR	19.61
COUNT RATIO	.986
AVE. COUNTS/MIN	270.5
CUB. FT./COUNT	.356
SCF AIR/MILE	113.8

LICENSE NO.	4H5800
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	4M/
AXLE RATIO	.00/5.87
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	10/20/66
TIME	2.42
GVW, LB	10000
LOAD, LB	2420
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	6.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	54 F
PRESSURE	29.23 IN.
HUMIDITY	37 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.453
MILES/GALLON	9.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.10
DILUTION RATIO	2.596
EXH/AIR RATIO	.960
SCF EXH/MILE	109.3
MILES/GALLON	9.3

IDLE

DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	18.4
RPM	560

ROUTE	ROAD-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	57.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1590 PPMC	3901 PPMC	.0153	4127 PPMC	.0162
HC FID					
TOTAL	2820 PPMC	6918 PPMC	.0272	7320 PPMC	.0288
OLEFINS	959 PPMC	2353 PPMC	.0092	2489 PPMC	.0098
AROMAT.	691 PPMC	1695 PPMC	.0061	1794 PPMC	.0065
PARAFS.	1170 PPMC	2870 PPMC	.0118	3037 PPMC	.0125
NOX	738 PPM	1811 PPM	.0236	1916 PPM	.0250
CO	1.25 PCT	3.07 PCT	.2436	3.24 PCT	.2577
CO2	4.84 PCT	11.87 PCT	1.4818	12.56 PCT	1.5678
O2	.55 PCT	1.35 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	168
3	165
4	163
5	163
6	165
7	168
8	160

7-8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 3-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	91.	.926
SAMP	1491	100.	.901
CARB	1452	90.	.929

ODOMETER	11530
TEST MILES	8.400
TEST MINUTES	29.43
CALC. MILES/HR	17.13
COUNT RATIO	1.027
AVE. COUNTS/MIN	270.5
CUB. FT./COUNT	.356
SCF AIR/MILE	55.7

LICENSE NO.	337D86
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	3M/
AXLE RATIO	.00/3.73
CARB. NO.	C2
DIST. NO.	ORG
AIR CL. NO.	C2

DATE	10/21/66
TIME	1.30
GVW, LB	5000
LOAD, LB	775
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.32 IN.
HUMIDITY	38 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.758
MILES/GALLON	20.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.46
DILUTION RATIO	3.926
EXH/AIR RATIO	.953
SCF EXH/MILE	53.0
MILES/GALLON	19.6

IDLE

DWELL ANGLE	31
IGN. TIMING	-6.0
A/F RATIO	13.7
MAN. VAC.	17.1
RPM	560

ROUTE	ROAD-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	43.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1025 PPMC	3852 PPMC	.0073	4024 PPMC	.0077
HC FID					
TOTAL	1843 PPMC	6925 PPMC	.0132	7236 PPMC	.0138
OLEFINS	599 PPMC	2251 PPMC	.0043	2352 PPMC	.0045
AROMAT.	375 PPMC	1409 PPMC	.0024	1472 PPMC	.0025
PARAFS.	869 PPMC	3265 PPMC	.0065	3412 PPMC	.0068
NOx	355 PPM	1334 PPM	.0084	1394 PPM	.0088
CO	.60 PCT	2.25 PCT	.0869	2.36 PCT	.0908
CO2	3.34 PCT	12.55 PCT	.7602	13.11 PCT	.7943
O2	.43 PCT	1.62 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	177
2	180
3	183
4	184
5	183
6	183
7	0
8	0

B-7

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 3-2

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	90.	.929
SAMP	1527	90.	.929
CARB	1521	91.	.926

ODOMETER	11553
TEST MILES	8.400
TEST MINUTES	27.25
CALC. MILES/HR	18.50
COUNT RATIO	1.004
AVE. COUNTS/MIN	270.5
CUB. FT./COUNT	.356
SCF AIR/MILE	58.1

LICENSE NO.	337D86
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	3M/
AXLE RATIO	.00/3.73
CARB. NO.	C2
DIST. NO.	ORG
AIR CL. NO.	C2

DATE	10/21/66
TIME	2.53
GVW, LB	5000
LOAD, LB	775
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.32 IN.
HUMIDITY	38 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.620
MILES/GALLON	20.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.59
DILUTION RATIO	3.827
EXH/AIR RATIO	.950
SCF EXH/MILE	55.2
MILES/GALLON	19.0

IDLE

DWELL ANGLE	31
IGN. TIMING	-6.0
A/F RATIO	13.7
MAN. VAC.	17.1
RPM	560

ROUTE	ROAD-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	43.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1210 PPMC	4380 PPMC	.0087	4631 PPMC	.0092
HC FID					
TOTAL	2072 PPMC	7500 PPMC	.0149	7930 PPMC	.0157
OLEFINS	686 PPMC	2483 PPMC	.0049	2625 PPMC	.0052
AROMAT.	368 PPMC	1332 PPMC	.0023	1408 PPMC	.0024
PARAFS.	1018 PPMC	3685 PPMC	.0077	3896 PPMC	.0081
NOx	418 PPM	1513 PPM	.0100	1600 PPM	.0105
CO	.53 PCT	1.92 PCT	.0770	2.03 PCT	.0814
CO2	3.46 PCT	12.52 PCT	.7899	13.24 PCT	.8352
O2	.52 PCT	1.88 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	177
2	180
3	183
4	184
5	183
6	183
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 4-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1
ROAD ROUTE	

	COUNT	GAS TEMP. DES.	GAS TEMP. CORR.
NITR	4000	75.	.977
SAMP	1545	85.	.945
CARB	1514	85.	.945

ODOMETER	27005
TEST MILES	8.400
TEST MINUTES	29.03
CALC. MILES/HR	17.36
COUNT RATIO	1.020
AVE. COUNTS/MIN	270.5
CUB. FT./COUNT	.356
SCF AIR/MILE	58.1

LICENSE NO.	554D97
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	230
TRANSMISSION	3W/
AXLE RATIO	.00/3.36
CARB. NO.	C1
DIST. NO.	C1
AIR CL. NO.	C1

DATE	10/22/66
TIME	9.36
GVW, LB	4500
LOAD, LB	775
PER CENT LOAD	50
MAXIMUM BHP	140
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.3

AMBIENT CONDITIONS

TEMP. 58 F
PRESSURE 29.02 IN.
HUMIDITY 65 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.677
MILES/GALLON	17.7

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.93
DILUTION RATIO	3.677
EXH/AIR RATIO	.964
SCF EXH/MILE	56.0
MILES/GALLON	17.7

IDLE

DWELL ANGLE	28
IGN. TIMING	-4.0
A/F RATIO	13.5
MAN. VAC.	16.0
RPM	480

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	45.20
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1370 PPMC	5037 PPMC	.0101	5037 PPMC	.0101
HC FID					
TOTAL	2522 PPMC	9273 PPMC	.0187	9273 PPMC	.0187
OLEFINS	853 PPMC	3136 PPMC	.0063	3136 PPMC	.0063
AROMAT.	509 PPMC	1871 PPMC	.0034	1871 PPMC	.0034
PARAFS.	1160 PPMC	4265 PPMC	.0090	4265 PPMC	.0090
NOX	253 PPM	930 PPM	.0062	930 PPM	.0062
CO	1.00 PCT	3.68 PCT	.1498	3.68 PCT	.1498
CO2	3.35 PCT	12.32 PCT	.7883	12.32 PCT	.7883
O2	.33 PCT	1.21 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	160
3	159
4	168
5	154
6	165
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.669 IS LOWER THAN 3.677 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 4-3

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	4000	90.	.929
SAMP	1512	89.	.932
CARB	1486	90.	.929

ODOMETER	27063
TEST MILES	8.400
TEST MINUTES	27.48
CALC. MILES/HR	18.34
COUNT RATIO	1.017
AVE. COUNTS/MIN	270.5
CUB. FT./COUNT	.356
SCF AIR/MILE	56.1

LICENSE NO.	554D97
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	230
TRANSMISSION	3M/
AXLE RATIO	.00/3.36
CARB. NO.	C1
DIST. NO.	C1
AIR CL. NO.	C1

DATE	10/22/66
TIME	2.04
GVW, LB	4500
LOAD, LB	775
PER CENT LOAD	50
MAXIMUM BHP	140
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.3

AMBIENT CONDITIONS

TEMP.	63 F
PRESSURE	29.02 IN.
HUMIDITY	58 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.637
MILES/GALLON	17.6

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.91
DILUTION RATIO	3.637
EXH/AIR RATIO	.964
SCF EXH/MILE	54.1
MILES/GALLON	17.6

IDLE

DWELL ANGLE	28
IGN. TIMING	-4.0
A/F RATIO	13.5
MAN. VAC.	16.5
RPM	480

ROUTE	ROAD-4
TRAFFIC	2

RPM/MPH

HIGH GEAR	45.20
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1490 PPMC	5419 PPMC	.0105	5419 PPMC	.0105
HC FID					
TOTAL	2683 PPMC	9758 PPMC	.0190	9758 PPMC	.0190
OLEFINS	897 PPMC	3262 PPMC	.0063	3262 PPMC	.0063
AROMAT.	560 PPMC	2037 PPMC	.0035	2037 PPMC	.0035
PARAFS.	1226 PPMC	4459 PPMC	.0091	4459 PPMC	.0091
NOX	266 PPM	967 PPM	.0062	967 PPM	.0062
CO	1.07 PCT	3.89 PCT	.1530	3.89 PCT	.1530
CO2	3.51 PCT	12.77 PCT	.7887	12.77 PCT	.7887
O2	.42 PCT	1.53 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	160
3	159
4	168
5	154
6	165
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.490 IS LOWER THAN 3.637 FROM NITROGEN COUNTS

B-10

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 5-2

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	77.	.970
SAMP	5246	65.	1.010
CARB	5260	64.	1.014

ODOMETER	4360
TEST MILES	9.140
TEST MINUTES	26.79
CALC. MILES/HR	20.47
COUNT RATIO	.997
AVE. COUNTS/MIN	275.2
CUR. FT./COUNT	.360
SCF AIR/MILE	204.0

LICENSE NO.	14M52
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	2/21/67
TIME	9.32
GVW, LB	30000
LOAD, LB	19000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	23 F
PRESSURE	29.17 IN.
HUMIDITY	71 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.830
MILES/GALLON	5.8

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.85
DILUTION RATIO	2.955
EXH/AIR RATIO	.945
SCF EXH/MILE	192.8
MILES/GALLON	5.6

IDLE	
DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	18.8
RPM	475

ROUTE	ROAD-4
TRAFFIC	1
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1220 PPMC	3453 PPMC	.0239	3606 PPMC	.0250
HC FID					
TOTAL	2187 PPMC	6190 PPMC	.0429	6464 PPMC	.0448
OLEFINS	720 PPMC	2038 PPMC	.0141	2128 PPMC	.0147
AROMAT.	567 PPMC	1605 PPMC	.0103	1676 PPMC	.0107
PARAFS.	900 PPMC	2547 PPMC	.0185	2660 PPMC	.0193
NOX	579 PPM	1639 PPM	.0377	1711 PPM	.0394
CO	.53 PCT	1.50 PCT	.2103	1.57 PCT	.2196
CO_2	4.53 PCT	12.82 PCT	2.8239	13.39 PCT	2.9489
O_2	.80 PCT	2.26 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	174
2	169
3	177
4	175
5	169
6	176
7	170
8	172

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 5-4

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	70.	.993
SAMP	5224	68.	1.000
CARB	5232	72.	.987

ODOMETER	4383
TEST MILES	0.140
TEST MINUTES	25.67
CALC. MILES/HR	21.36
COUNT RATIO	.998
AVE. COUNTS/MIN	275.2
CUB. FT./COUNT	.360
SCF AIR/MILE	197.6

LICENSE NO.	14M52
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	2/21/67
TIME	1.23
GVW, LB	30000
LOAD, LB	11000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	27 F
PRESSURE	29.20 IN.
HUMIDITY	63 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.901
MILES/GALLON	5.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.09
DILUTION RATIO	2.928
EXH/AIR RATIO	.941
SCF EXH/MILE	186.0
MILES/GALLON	5.9

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	18.7
RPM	475

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1220 PPMC	3540 PPMC	.0237	3573 PPMC	.0239
HC FID					
TOTAL	2188 PPMC	6348 PPMC	.0424	6407 PPMC	.0428
OLEFINS	702 PPMC	2037 PPMC	.0136	2056 PPMC	.0137
AROMAT.	604 PPMC	1752 PPMC	.0109	1769 PPMC	.0110
PARAFS.	882 PPMC	2559 PPMC	.0179	2583 PPMC	.0181
NOx	560 PPM	1625 PPM	.0361	1640 PPM	.0364
CO	.43 PCT	1.25 PCT	.1687	1.26 PCT	.1702
CO2	4.60 PCT	13.35 PCT	2.8346	13.47 PCT	2.8610
O2	.76 PCT	2.20 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	174
2	169
3	177
4	175
5	169
6	176
7	170
8	172

B-23

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 6-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	58.	1.035
SAMP	2400	69.	.997
CARB	2440	92.	.923

ODOMETER	40269
TEST MILES	8.400
TEST MINUTES	26.33
CALC. MILES/HR	19.14
COUNT RATIO	.984
AVE. COUNTS/MIN	275.2
CUB. FT./COUNT	.360
SCF AIR/MILE	94.9

LICENSE NO.	6470CJ
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	.00/7.00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	10/26/66
TIME	10.05
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	49 F
PRESSURE	29.55 IN.
HUMIDITY	30 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.731
MILES/GALLON	11.0

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.99
DILUTION RATIO	2.752
EXH/AIR RATIO	.962
SCF EXH/MILE	91.3
MILES/GALLON	10.9

IDLE	
DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	19.1
RPM	580

ROUTE	ROAD-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1710 PPMC	4670 PPMC	.0153	4706 PPMC	.0155
HC FID					
TOTAL	3268 PPMC	8925 PPMC	.0293	8994 PPMC	.0295
OLEFINS	964 PPMC	2633 PPMC	.0086	2653 PPMC	.0087
AROMAT.	886 PPMC	2420 PPMC	.0073	2439 PPMC	.0074
PARAFS.	1418 PPMC	3872 PPMC	.0133	3903 PPMC	.0134
NOX	508 PPM	1387 PPM	.0151	1398 PPM	.0152
CO	1.28 PCT	3.50 PCT	.2321	3.52 PCT	.2339
CO2	4.50 PCT	12.29 PCT	1.2821	12.39 PCT	1.2922
O2	.53 PCT	1.45 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

B-63

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 6-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	4000	74.	.980
SAMP	2635	76.	.973
CARB	2647	88.	.935

ODOMETER	40293
TEST MILES	8.400
TEST MINUTES	25.65
CALC. MILES/HR	19.65
COUNT RATIO	.995
AVE. COUNTS/MIN	275.2
CUB. FT./COUNT	.360
SCF AIR/MILE	104.2

LICENSE NO.	6470CJ
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	.00/7.00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	10/26/66
TIME	11.34
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	52 F
PRESSURE	29.55 IN.
HUMIDITY	38 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.528
MILES/GALLON	10.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.02
DILUTION RATIO	2.591
EXH/AIR RATIO	.962
SCF EXH/MILE	100.2
MILES/GALLON	10.0

IDLE

DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	19.3
RPM	580

ROUTE	ROAD-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2010 PPMC	5082 PPMC	.0183	5207 PPMC	.0188
HC FID					
TOTAL	3741 PPMC	9458 PPMC	.0341	9691 PPMC	.0349
OLEFINS	879 PPMC	2222 PPMC	.0080	2277 PPMC	.0082
AROMAT.	1029 PPMC	2602 PPMC	.0086	2666 PPMC	.0088
PARAFS.	1833 PPMC	4634 PPMC	.0175	4749 PPMC	.0179
NOX	476 PPM	1203 PPM	.0144	1233 PPM	.0148
CO	1.33 PCT	3.36 PCT	.2449	3.45 PCT	.2509
CO2	4.80 PCT	12.14 PCT	1.3886	12.43 PCT	1.4229
O2	.55 PCT	1.39 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 7-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3000	70.	.993
SAMP	1362	80.	.932
CARB	1369	88.	.935

ODOMETER	1220
TEST MILES	8.400
TEST MINUTES	26.10
CALC. MILES/HR	19.31
COUNT RATIO	.995
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.352
SCF AIR/MILE	52.5

LICENSE NO.	2204CC
MODEL YEAR	1966
ENGINE TYPE	I-4
DISPLACEMENT	152
TRANSMISSION	3M/
AXLE RATIO	.00/4.27
CARB. NO.	I1
DIST. NO.	I1
AIR CL. NO.	I1

DATE	10/26/66
TIME	2.58
GVW, LB	3900
LOAD, LB	500
PER CENT LOAD	50
MAXIMUM RHP	152
CL.MASK, SQ. IN.	.0
PCV, CFM	1.1

AMBIENT CONDITIONS

TEMP.	56 F
PRESSURE	29.50 IN.
HUMIDITY	45 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.347
MILES/GALLON	18.4

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.03
DILUTION RATIO	3.347
EXH/AIR RATIO	.962
SCF EXH/MILE	50.5
MILES/GALLON	18.4

IDLE

DWELL ANGLE	36
IGN. TIMING	-5.0
A/F RATIO	12.9
MAN. VAC.	18.2
RPM	500

ROUTE	ROAD-1
TRAFFIC	3
RPM/MPH	
HIGH GEAR	51.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1420 PPMC	4752 PPMC	.0086	4752 PPMC	.0086
HC FID					
TOTAL	2088 PPMC	6988 PPMC	.0127	6988 PPMC	.0127
OLEFINS	256 PPMC	857 PPMC	.0016	857 PPMC	.0016
AROMAT.	573 PPMC	1918 PPMC	.0031	1918 PPMC	.0031
PARAFS.	1259 PPMC	4214 PPMC	.0080	4214 PPMC	.0080
NOX	480 PPM	1606 PPM	.0097	1606 PPM	.0097
CO	1.12 PCT	3.75 PCT	.1377	3.75 PCT	.1377
CO_2	4.07 PCT	13.62 PCT	.7860	13.62 PCT	.7860
O_2	.97 PCT	3.25 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	161
3	158
4	160
5	0
6	0
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.058 IS LOWER THAN 3.347 FROM NITROGEN COUNTS

B-15

BHC

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 7-2

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3000	77.	.970
SAMP	1527	94.	.917
CARB	1537	78.	.967

ODOMETER	1243
TEST MILES	8.400
TEST MINUTES	26.99
CALC. MILES/HR	18.67
COUNT RATIO	.993
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.352
SCF AIR/MILE	60.7

LICENSE NO.	2204CC
MODEL YEAR	1966
ENGINE TYPE	I-4
DISPLACEMENT	152
TRANSMISSION	3M/
AXLE RATIO	.00/4.27
CARB. NO.	I1
DIST. NO.	I1
AIR CL. NO.	I1

DATE	10/27/66
TIME	9.36
GVW, LB	3900
LOAD, LB	500
PER CENT LOAD	50
MAXIMUM BHP	152
CL.MASK, SQ. IN.	.0
PCV, CFM	1.1

AMBIENT CONDITIONS

TEMP.	53 F
PRESSURE	29.42 IN.
HUMIDITY	62 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.078
MILES/GALLON	14.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.03
DILUTION RATIO	3.078
EXH/AIR RATIO	.962
SCF EXH/MILE	58.4
MILES/GALLON	14.9

IDLE

DWELL ANGLE	36
IGN. TIMING	-5.0
A/F RATIO	12.9
MAN. VAC.	18.2
RPM	500

ROUTE	ROAD-1
TRAFFIC	1
RPM/MPH	
HIGH GEAR	51.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1520 PPMC	4679 PPMC	.0098	4679 PPMC	.0098
HC FID					
TOTAL	2896 PPMC	8914 PPMC	.0187	8914 PPMC	.0187
OLEFINS	916 PPMC	2819 PPMC	.0059	2819 PPMC	.0059
AROMAT.	686 PPMC	2112 PPMC	.0040	2112 PPMC	.0040
PARAFS.	1294 PPMC	3983 PPMC	.0088	3983 PPMC	.0088
NOX	529 PPM	1628 PPM	.0113	1628 PPM	.0113
CO	1.29 PCT	3.97 PCT	.1685	3.97 PCT	.1685
CO2	4.68 PCT	14.41 PCT	.9604	14.41 PCT	.9604
O2	1.02 PCT	3.14 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	161
3	158
4	160
5	0
6	0
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.659 IS LOWER THAN 3.078 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 8-4

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	3500	87.	.938
SAMP	1547	87.	.938
CARB	1546	9A.	.905

ODOMETER	22870
TEST MILES	8.400
TEST MINUTES	26.69
CALC. MILES/HR	18.88
COUNT RATIO	1.001
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.352
SCF AIR/MILE	56.8

LICENSE NO.	123D19
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	3M/
AXLE RATIO	.00/3.08
CARB. NO.	C3
DIST. NO.	ORG
AIR CL. NO.	C3

DATE	10/28/66
TIME	2.53
GVW, LB	5000
LOAD, LB	825
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	72 F
PRESSURE	29.24 IN.
HUMIDITY	35 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.262
MILES/GALLON	17.4

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.62
DILUTION RATIO	3.262
EXH/AIR RATIO	.971
SCF EXH/MILE	55.1
MILES/GALLON	17.4

IDLE

DWELL ANGLE	30
IGN. TIMING	-4.0
A/F RATIO	13.6
MAN. VAC.	18.5
RPM	550

ROUTE	ROAD-1
TRAFFIC	2

RPM/MPH

HIGH GEAR	40.60
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1450 PPMC	4731 PPMC	.0094	4731 PPMC	.0094
HC FID					
TOTAL	2733 PPMC	8916 PPMC	.0177	8916 PPMC	.0177
OLEFINS	872 PPMC	2845 PPMC	.0056	2845 PPMC	.0056
AROMAT.	647 PPMC	2111 PPMC	.0038	2111 PPMC	.0038
PARAFS.	1214 PPMC	3961 PPMC	.0082	3961 PPMC	.0082
NOX	118 PPM	385 PPM	.0025	385 PPM	.0025
CO	1.40 PCT	4.57 PCT	.1830	4.57 PCT	.1830
CO2	3.70 PCT	12.07 PCT	.7599	12.07 PCT	.7599
O2	.39 PCT	1.27 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	176
2	180
3	192
4	185
5	170
6	168
7	187
8	178

DIL. RATIO FROM CO/CO2 CALCN. = 3.185 IS LOWER THAN 3.262 FROM NITROGEN COUNTS

B-17

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 8-5

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3514	73.	.983
SAMP	1631	75.	.977
CARB	1604	58.	1.035

ODOMETER	22892
TEST MILES	8.400
TEST MINUTES	26.27
CALC. MILES/HR	19.19
COUNT RATIO	1.017
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.352
SCF AIR/MILE	68.4

LICENSE NO.	123D19
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	3M/
AXLE RATIO	.00/3.08
CARB. NO.	C3
DIST. NO.	ORG
AIR CL. NO.	C3

DATE	10/29/66
TIME	9.03
GVW, LB	5000
LOAD, LB	825
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	46 F
PRESSURE	29.59 IN.
HUMIDITY	53 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.169
MILES/GALLON	14.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.57
DILUTION RATIO	3.169
EXH/AIR RATIO	.972
SCF EXH/MILE	66.5
MILES/GALLON	14.6

IDLE

DWELL ANGLE	30
IGN. TIMING	-4.0
A/F RATIO	13.6
MAN. VAC.	18.5
RPM	550

ROUTE	ROAD-1
TRAFFIC	1
RPM/MPH	
HIGH GEAR	40.60
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1380 PPMC	4373 PPMC	.0105	4373 PPMC	.0105
HC FID					
TOTAL	2755 PPMC	8731 PPMC	.0209	8731 PPMC	.0209
OLEFINS	945 PPMC	2995 PPMC	.0072	2995 PPMC	.0072
AROMAT.	584 PPMC	1851 PPMC	.0040	1851 PPMC	.0040
PARAFS.	1226 PPMC	3885 PPMC	.0097	3885 PPMC	.0097
NOX	139 PPM	441 PPM	.0035	441 PPM	.0035
CO	1.46 PCT	4.63 PCT	.2237	4.63 PCT	.2237
CO2	3.74 PCT	11.85 PCT	.9001	11.85 PCT	.9001
O2	.39 PCT	1.24 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	176
2	180
3	192
4	185
5	170
6	168
7	187
8	178

DIL. RATIO FROM CO/CO2 CALCN. = 3.132 IS LOWER THAN 3.169 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 9-2

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	69.	.997
SAMP	1562	78.	.967
CARB	1544	55.	1.046

ODOMETER	1965
TEST MILES	8.400
TEST MINUTES	27.04
CALC. MILES/HR	18.64
COUNT RATIO	1.012
AVE. COUNTS/MIN	273.6
CUR. FT./COUNT	.352
SCF AIR/MILE	66.6

LICENSE NO.	104753
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	225
TRANSMISSION	3M/
AXLE RATIO	.00/3.55
CARB. NO.	D1
DIST. NO.	D1
AIR CL. NO.	D1

DATE	10/29/66
TIME	1.37
GVW, LB	5200
LOAD, LB	875
PER CENT LOAD	50
MAXIMUM BHP	140
CL.MASK, SQ. IN.	10.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	50 F
PRESSURE	29.59 IN.
HUMIDITY	39 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.310
MILES/GALLON	14.2

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.64
DILUTION RATIO	3.310
EXH/AIR RATIO	.970
SCF EXH/MILE	64.6
MILES/GALLON	14.2

IDLE	
DWELL ANGLE	45
IGN. TIMING	-2.5
A/F RATIO	12.7
MAN. VAC.	19.6
RPM	550

ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1430 PPMC	4733 PPMC	.0110	4733 PPMC	.0110
HC FID					
TOTAL	2882 PPMC	9539 PPMC	.0222	9539 PPMC	.0222
OLEFINS	1032 PPMC	3416 PPMC	.0079	3416 PPMC	.0079
AROMAT.	586 PPMC	1940 PPMC	.0040	1940 PPMC	.0040
PARAFS.	1264 PPMC	4184 PPMC	.0102	4184 PPMC	.0102
NOX	348 PPM	1152 PPM	.0089	1152 PPM	.0089
CO	1.42 PCT	4.70 PCT	.2208	4.70 PCT	.2208
CO2	3.82 PCT	12.64 PCT	.9332	12.64 PCT	.9332
O2	.37 PCT	1.22 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	172
2	171
3	169
4	172
5	169
6	176
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.096 IS LOWER THAN 3.310 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 9-3

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	80.	.960
SAMP	1596	78.	.967
CARB	1585	52.	1.057

ODOMETER	1987
TEST MILES	8.400
TEST MINUTES	25.91
CALC. MILES/HR	19.45
COUNT RATIO	1.007
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.352
SCF AIR/MILE	69.1

LICENSE NO.	10M753
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	225
TRANSMISSION	3M/
AXLE RATIO	.00/3.55
CARB. NO.	D1
DIST. NO.	D1
AIR CL. NO.	D1

DATE	10/29/66
TIME	3.06
GVW, LB	5200
LOAD, LB	875
PER CENT LOAD	50
MAXIMUM BHP	140
CL.MASK, SQ. IN.	10.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	50 F
PRESSURE	29.59 IN.
HUMIDITY	41 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.178
MILES/GALLON	15.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.81
DILUTION RATIO	3.253
EXH/AIR RATIO	.966
SCF EXH/MILE	66.7
MILES/GALLON	14.8

IDLE

DWELL ANGLE	45
IGN. TIMING	-2.5
A/F RATIO	12.7
MAN. VAC.	19.6
RPM	550

ROUTE	ROAD-1
TRAFFIC	3
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1370 PPMC	4354 PPMC	.0105	4456 PPMC	.0107
HC FID					
TOTAL	2804 PPMC	8912 PPMC	.0214	9121 PPMC	.0219
OLEFINS	997 PPMC	3169 PPMC	.0076	3243 PPMC	.0078
AROMAT.	576 PPMC	1831 PPMC	.0039	1874 PPMC	.0040
PARAFS.	1231 PPMC	3913 PPMC	.0099	4004 PPMC	.0101
NOX	404 PPM	1284 PPM	.0102	1314 PPM	.0105
CO	1.22 PCT	3.88 PCT	.1882	3.97 PCT	.1926
CO2	3.72 PCT	11.82 PCT	.9014	12.10 PCT	.9225
O2	.35 PCT	1.11 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	172
2	171
3	169
4	172
5	169
6	176
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 10-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	3
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	70.	.993
SAMP	1170	90.	.929
CARB	1176	86.	.941

ODOMETER	23966
TEST MILES	8.400
TEST MINUTES	27.17
CALC. MILES/HR	18.55
COUNT RATIO	.995
AVF. COUNTS/MIN	273.6
CUR. FT./COUNT	.352
SCF AIR/MILE	44.4

LICENSE NO.	GD9807
MODEL YEAR	1963
ENGINE TYPE	I-6
DISPLACEMENT	170
TRANSMISSION	3M/
AXLE RATIO	.00/4.57
CARB. NO.	F3
DIST. NO.	F3
AIR CL. NO.	F3

DATE	10/31/66
TIME	11.45
GVW. LB	4930
LOAD. LB	965
PER CENT LOAD	50
MAXIMUM BHP	89
CL.MASK. SQ. IN.	3.4
PCV. CFM	.7

AMBIENT CONDITIONS

TEMP.	56 F
PRESSURE	28.85 IN.
HUMIDITY	49 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	4.198
MILES/GALLON	20.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.28
DILUTION RATIO	4.198
EXH/AIR RATIO	.956
SCF EXH/MILE	42.5
MILES/GALLON	20.6

IDLE

DWELL ANGLE	36
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	21.0
RPM	650

ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	56.10
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1425 PPMC	5982 PPMC	.0091	5982 PPMC	.0091
HC FID					
TOTAL	2663 PPMC	11178 PPMC	.0171	11178 PPMC	.0171
OLEFINS	745 PPMC	3127 PPMC	.0048	3127 PPMC	.0048
AROMAT.	841 PPMC	3530 PPMC	.0051	3530 PPMC	.0051
PARAFS.	1077 PPMC	4521 PPMC	.0072	4521 PPMC	.0072
NOX	417 PPM	1750 PPM	.0089	1750 PPM	.0089
CO	.77 PCT	3.23 PCT	.0998	3.23 PCT	.0998
CO2	3.55 PCT	14.90 PCT	.7225	14.90 PCT	.7225
O2	.61 PCT	2.56 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	185
2	196
3	179
4	183
5	191
6	185
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.621 IS LOWER THAN 4.198 FROM NITROGEN COUNTS

B-21

B-22

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 10-3

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	3500	98.	.905
SAMP	1354	100.	.900
CARB	1369	85.	.945

ODOMETER	24012
TEST MILES	8.400
TEST MINUTES	28.85
CALC. MILES/HR	17.47
COUNT RATIO	.989
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.352
SCF AIR/MILE	51.8

LICENSE NO.	GD9807
MODEL YEAR	1963
ENGINE TYPE	I-6
DISPLACEMENT	170
TRANSMISSION	3M/
AXLE RATIO	.00/4.57
CARB. NO.	F3
DIST. NO.	F3
AIR CL. NO.	F3

DATE	10/31/66
TIME	3.45
GVW, LB	4930
LOAD, LB	965
PER CENT LOAD	50
MAXIMUM BHP	89
CL.MASK, SQ. IN.	3.4
PCV, CFM	.7

AMBIENT CONDITIONS

TEMP.	63 F
PRESSURE	28.82 IN.
HUMIDITY	36 PCT

	FROM NITROGEN COUNTS	FROM CO/CO2 CALCN.
		AIR/FUEL RATIO 13.35
DILUTION RATIO	3.602	DILUTION RATIO 3.602
		EXH/AIR RATIO .955
		SCF EXH/MILE 49.5
MILES/GALLON	20.0	MILES/GALLON 20.0

IDLE

DWELL ANGLE	36
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	20.5
RPM	650

ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	56.10
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1565 PPMC	5637 PPMC	.0100	5637 PPMC	.0100
HC FID					
TOTAL	2770 PPMC	9977 PPMC	.0178	9977 PPMC	.0178
OLEFINS	857 PPMC	3087 PPMC	.0055	3087 PPMC	.0055
AROMAT.	703 PPMC	2532 PPMC	.0041	2532 PPMC	.0041
PARAFS.	1210 PPMC	4358 PPMC	.0081	4358 PPMC	.0081
NOX	571 PPM	2057 PPM	.0122	2057 PPM	.0122
CO	.75 PCT	2.70 PCT	.0972	2.70 PCT	.0972
CO2	3.70 PCT	13.33 PCT	.7532	13.33 PCT	.7532
O2	.61 PCT	2.20 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	185
2	196
3	179
4	183
5	191
6	185
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.502 IS LOWER THAN 3.602 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 11-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	NONE
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3501	80.	.960
SAMP	1460	85.	.945
CARB	1438	53.	1.053

ODOMETER	2190
TEST MILES	8.400
TEST MINUTES	27.10
CALC. MILES/HR	18.60
COUNT RATIO	1.015
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.362
SCF AIR/MILE	63.2

LICENSE NO.	10M753
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	225
TRANSMISSION	3M/
AXLE RATIO	.00/3.55
CARB. NO.	D1
DIST. NO.	D1
AIR CL. NO.	D1

DATE	11/ 1/66
TIME	12.56
GVW, LB	5200
LOAD, LB	0
PER CENT LOAD	0
MAXIMUM BHP	140
CL.MASK, SQ. IN.	10.0
PCV, CFM	1.7

ROAD ROUTE

AMBIENT CONDITIONS		FROM NITROGEN COUNTS		FROM CO/CO2 CALCN.	
		DILUTION RATIO	3.438	AIR/FUEL RATIO	12.75
TEMP.	43 F			DILUTION RATIO	3.438
PRESSURE	29.15 IN.			EXH/AIR RATIO	.968
HUMIDITY	60 PCT	MILES/GALLON	15.9	SCF EXH/MILE	61.2
				MILES/GALLON	15.9

IDLE	
DWELL ANGLE	45
IGN. TIMING	-2.5
A/F RATIO	12.7
MAN. VAC.	19.6
RPM	550

ROUTE	ROAD-1
TRAFFIC	1
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1490 PPMC	5123 PPMC	.0113	5123 PPMC	.0113
HC FID					
TOTAL	2943 PPMC	10118 PPMC	.0223	10118 PPMC	.0223
OLEFINS	1076 PPMC	3699 PPMC	.0081	3699 PPMC	.0081
AROMAT.	538 PPMC	1850 PPMC	.0036	1850 PPMC	.0036
PARAFS.	1329 PPMC	4569 PPMC	.0105	4569 PPMC	.0105
NOX	362 PPM	1245 PPM	.0091	1245 PPM	.0091
CO	1.21 PCT	4.16 PCT	.1850	4.16 PCT	.1850
CO2	3.53 PCT	12.14 PCT	.8478	12.14 PCT	.8478
O2	.35 PCT	1.20 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	172
2	171
3	169
4	172
5	169
6	176
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.401 IS LOWER THAN 3.438 FROM NITROGEN COUNTS

111 NO LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 11-3

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	NONE
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	66.	1.007
SAMP	1227	69.	.997
CARB	1236	35.	1.123

ODOMETER	2248
TEST MILES	8.400
TEST MINUTES	25.60
CALC. MILES/HR	19.69
COUNT RATIO	.993
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.362
SCF AIR/MILE	58.5

LICENSE NO.	10M753
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	225
TRANSMISSION	3M/
AXLE RATIO	.00/3.55
CARB. NO.	D1
DIST. NO.	D1
AIR CL. NO.	D1

DATE	11/ 4/66
TIME	9.20
GVW, LB	5200
LOAD, LB	0
PER CENT LOAD	0
MAXIMUM BHP	140
CL.MASK, SQ. IN.	10.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	25 F
PRESSURE	29.33 IN.
HUMIDITY	63 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.882
MILES/GALLON	17.7

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.13
DILUTION RATIO	3.882
EXH/AIR RATIO	.959
SCF EXH/MILE	56.1
MILES/GALLON	17.7

IDLE	
DWELL ANGLE	45
IGN. TIMING	-2.5
A/F RATIO	12.7
MAN. VAC.	19.7
RPM	550

ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1240 PPMC	4813 PPMC	.0097	4813 PPMC	.0097
HC FID					
TOTAL	2328 PPMC	9037 PPMC	.0182	9037 PPMC	.0182
OLEFINS	783 PPMC	3039 PPMC	.0061	3039 PPMC	.0061
AROMAT.	459 PPMC	1782 PPMC	.0032	1782 PPMC	.0032
PARAFS.	1086 PPMC	4216 PPMC	.0089	4216 PPMC	.0089
NOX	390 PPM	1514 PPM	.0101	1514 PPM	.0101
CO	.83 PCT	3.22 PCT	.1314	3.22 PCT	.1314
CO2	3.30 PCT	12.81 PCT	.8206	12.81 PCT	.8206
O2	.47 PCT	1.82 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	172
2	171
3	169
4	172
5	169
6	176
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.821 IS LOWER THAN 3.882 FROM NITROGEN COUNTS

113 NO LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 12-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	FULL
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	62.	1.021
SAMP	1451	73.	.983
CARB	1454	46.	1.080

ODOMETER	2270
TEST MILES	8.400
TEST MINUTES	27.40
CALC. MILES/HR	18.39
COUNT RATIO	.998
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.362
SCF AIR/MILE	66.0

LICENSE NO.	10M753
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	225
TRANSMISSION	3M/
AXLE RATIO	.00/3.55
CARB. NO.	D1
DIST. NO.	D1
AIR CL. NO.	D1

DATE	11/ 4/66
TIME	1.58
GVW, LB	5200
LOAD, LB	1775
PER CENT LOAD	100
MAXIMUM BHP	140
CL.MASK, SQ. IN.	10.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	32 F
PRESSURE	29.32 IN.
HUMIDITY	59 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.504
MILES/GALLON	15.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.96
DILUTION RATIO	3.504
EXH/AIR RATIO	.963
SCF EXH/MILE	63.6
MILES/GALLON	15.3

IDLE	
DWELL ANGLE	45
IGN. TIMING	-2.5
A/F RATIO	12.7
MAN. VAC.	19.7
RPM	550

ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1280 PPMC	4486 PPMC	.0103	4486 PPMC	.0103
HC FID					
TOTAL	2473 PPMC	8666 PPMC	.0198	8666 PPMC	.0198
OLEFINS	907 PPMC	3178 PPMC	.0073	3178 PPMC	.0073
AROMAT.	480 PPMC	1682 PPMC	.0034	1682 PPMC	.0034
PARAFS.	1086 PPMC	3806 PPMC	.0091	3806 PPMC	.0091
NOX	413 PPM	1447 PPM	.0110	1447 PPM	.0110
CO	1.06 PCT	3.71 PCT	.1717	3.71 PCT	.1717
CO2	3.62 PCT	12.69 PCT	.9215	12.69 PCT	.9215
O2	.43 PCT	1.51 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	172
2	171
3	169
4	172
5	169
6	176
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.406 IS LOWER THAN 3.504 FROM NITROGEN COUNTS

121 FULL LOAD.

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 12-2

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	FULL
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	59.	1.031
SAMP	1606	68.	1.000
CARB	1588	50.	1.064

ODOMETER	2292
TEST MILES	8.400
TEST MINUTES	26.99
CALC. MILES/HR	18.67
COUNT RATIO	1.011
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.362
SCF AIR/MILE	71.1

LICENSE NO.	10M753
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	225
TRANSMISSION	3M/
AXLE RATIO	.00/3.55
CARB. NO.	D1
DIST. NO.	D1
AIR CL. NO.	D1

DATE	11/ 4/66
TIME	2.20
GVW, LB	5200
LOAD, LB	1775
PER CENT LOAD	100
MAXIMUM BHP	140
CL.MASK, SQ. IN.	10.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	34 F
PRESSURE	29.32 IN.
HUMIDITY	59 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.248
MILES/GALLON	13.8

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.84
DILUTION RATIO	3.248
EXH/AIR RATIO	.966
SCF EXH/MILE	68.6
MILES/GALLON	13.8

IDLE

DWELL ANGLE	45
IGN. TIMING	-2.5
A/F RATIO	12.7
MAN. VAC.	19.7
RPM	550

ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1690 PPMC	5489 PPMC	.0135	5489 PPMC	.0135
HC FID					
TOTAL	3245 PPMC	10539 PPMC	.0260	10539 PPMC	.0260
OLEFINS	1142 PPMC	3709 PPMC	.0091	3709 PPMC	.0091
AROMAT.	648 PPMC	2105 PPMC	.0046	2105 PPMC	.0046
PARAFS.	1455 PPMC	4726 PPMC	.0122	4726 PPMC	.0122
NOX	438 PPM	1423 PPM	.0117	1423 PPM	.0117
CO	1.25 PCT	4.06 PCT	.2026	4.06 PCT	.2026
CO2	3.89 PCT	12.63 PCT	.9905	12.63 PCT	.9905
O2	.45 PCT	1.46 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	172
2	171
3	169
4	172
5	169
6	176
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.122 IS LOWER THAN 3.248 FROM NITROGEN COUNTS

122 FULL LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 13-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	83.	.951
SAMP	2142	82.	.954
CARB	2148	43.	1.091

ODOMETER	2279
TEST MILES	8.40C
TEST MINUTES	25.79
CALC. MILES/HR	19.54
COUNT RATIO	.997
AVE. COUNTS/MIN	273.6
CUB. FT./COUNT	.352
SCF AIR/MILE	96.4

LICENSE NO.	1448CG
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	.00/4.56
CARB. NO.	F4
DIST. NO.	F4
AIR CL. NO.	F1

DATE	11/ 5/66
TIME	9.18
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	32 F
PRESSURE	29.53 IN.
HUMIDITY	92 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.861
MILES/GALLON	11.3

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.83
DILUTION RATIO	3.076
EXH/AIR RATIO	.966
SCF EXH/MILE	93.1
MILES/GALLON	10.5

IDLE

DWELL ANGLE	39
IGN. TIMING	-6.0
A/F RATIO	12.8
MAN. VAC.	16.7
RPM	525

ROUTE	ROAD-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1985 PPMC	5680 PPMC	.0190	6106 PPMC	.0204
HC FID					
TOTAL	3624 PPMC	10369 PPMC	.0347	11148 PPMC	.0373
OLEFINS	841 PPMC	2406 PPMC	.0081	2587 PPMC	.0087
AROMAT.	1032 PPMC	2953 PPMC	.0091	3175 PPMC	.0098
PARAFS.	1751 PPMC	5010 PPMC	.0176	5386 PPMC	.0189
NOX	515 PPM	1474 PPM	.0164	1584 PPM	.0176
CO	1.28 PCT	3.66 PCT	.2479	3.94 PCT	.2666
CO2	3.94 PCT	11.27 PCT	1.1991	12.12 PCT	1.2691
O2	.57 PCT	1.63 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	183
2	197
3	196
4	191
5	196
6	185
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 13-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	66.	1.007
SAMP	2209	67.	1.003
CARB	2227	50.	1.064

ODOMETER	2301
TEST MILES	8.400
TEST MINUTES	27.60
CALC. MILES/HR	18.26
COUNT RATIO	.992
AVE. COUNTS/MIN	273.6
CUR. FT./COUNT	.352
SCF AIR/MILE	97.4

LICENSE NO.	1448CG
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	.00/4.56
CARB. NO.	F4
DIST. NO.	F4
AIR CL. NO.	F1

DATE	11/ 5/66
TIME	10.37
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	35 F
PRESSURE	29.53 IN.
HUMIDITY	92 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.817
MILES/GALLON	10.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.75
DILUTION RATIO	2.879
EXH/AIR RATIO	.968
SCF EXH/MILE	94.3
MILES/GALLON	10.3

IDLE

DWELL ANGLE	39
IGN. TIMING	-6.0
A/F RATIO	12.8
MAN. VAC.	16.7
RPM	525

ROUTE	ROAD-2
TRAFFIC	3

RPM/MPH

HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2320 PPMC	6535 PPMC	.0222	6679 PPMC	.0226
HC FID					
TOTAL	4153 PPMC	11699 PPMC	.0397	11956 PPMC	.0405
OLEFINS	938 PPMC	2642 PPMC	.0089	2700 PPMC	.0091
AROMAT.	1054 PPMC	2969 PPMC	.0091	3034 PPMC	.0093
PARAFS.	2161 PPMC	6087 PPMC	.0216	6221 PPMC	.0221
NOX	515 PPM	1451 PPM	.0163	1483 PPM	.0167
CO	1.43 PCT	4.03 PCT	.2761	4.12 PCT	.2821
CO2	4.17 PCT	11.75 PCT	1.2648	12.01 PCT	1.2926
O2	.57 PCT	1.61 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	183
2	197
3	196
4	191
5	196
6	185
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 14-1

ROAD OPN. LOS ANGELES
WT. CLASS 2
LOAD NONE
TRUCK MAKE GMC
FLOW ELEM. 4
TRUCK NUMBER 1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	82.	.954
SAMP	2335	76.	.973
CARB	2321	65.	1.010

ODOMETER	41005
TEST MILES	8.400
TEST MINUTES	25.45
CALC. MILES/HR	19.80
COUNT RATIO	1.006
AVE. COUNTS/MIN	283.3
CUB. FT./COUNT	.349
SCF AIR/MILE	95.7

LICENSE NO.	647-CJ
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	.00/*.00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	11/ 5/66
TIME	3.04
GVW, LB	7500
LOAD, LB	0
PER CENT LOAD	0
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP. 35 F
PRESSURE 29.53 IN.
HUMIDITY 92 PCT

FROM NITROGEN COUNTS

DILUTION RATIO 2.679

MILES/GALLON 11.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.13
DILUTION RATIO	2.740
EXH/AIR RATIO	.959
SCF EXH/MILE	91.8
MILES/GALLON	11.0

IDLE

DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	19.5
RPM	475

ROUTE	ROAD-2
TRAFFIC	3

RPM/MPH

HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1730 PPMC	4635 PPMC	.0153	4741 PPMC	.0156
HC FID					
TOTAL	3324 PPMC	8905 PPMC	.0294	9109 PPMC	.0301
OLEFINS	831 PPMC	2226 PPMC	.0073	2277 PPMC	.0075
AROMAT.	941 PPMC	2521 PPMC	.0077	2579 PPMC	.0078
PARAFS.	1552 PPMC	4158 PPMC	.0144	4253 PPMC	.0147
NOX	487 PPM	1305 PPM	.0143	1335 PPM	.0146
CO	1.16 PCT	3.11 PCT	.2074	3.18 PCT	.2121
CO2	4.60 PCT	12.32 PCT	1.2919	12.61 PCT	1.3215
O2	.61 PCT	1.63 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

141 NO LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 14-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	NONE
TRUCK MAKE	GMC
ENGINE ELEN.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	62.	1.021
SAMP	2577	70.	.993
CARB	2560	65.	1.010

ODOMETER	41028
TEST MILES	8.400
TEST MINUTES	26.59
CALC. MILES/HR	18.95
COUNT RATIO	1.007
AVE. COUNTS/MIN	283.3
CUB. FT./COUNT	.349
SCF AIR/MILE	105.5

LICENSE NO.	6470CJ
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	.00/7.00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	11/ 5/66
TIME	4.26
GVW, LB	7500
LOAD, LB	0
PER CENT LOAD	0
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	35 F
PRESSURE	29.53 IN.
HUMIDITY	96 PCT

	FROM NITROGEN COUNTS	FROM CO/CO2 CALCN.
DILUTION RATIO	2.595	AIR/FUEL RATIO 13.10
MILES/GALLON	10.4	DILUTION RATIO 2.731
		EXH/AIR RATIO .960
		SCF EXH/MILE 101.3
		MILES/GALLON 9.9

IDLE	
DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	16.7
RPM	475

ROUTE	ROAD-2
TRAFFIC	3
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1890 PPMC	4905 PPMC	.0179	5161 PPMC	.0188
HC FID					
TOTAL	3568 PPMC	9260 PPMC	.0337	9743 PPMC	.0355
OLEFINS	798 PPMC	2071 PPMC	.0075	2179 PPMC	.0079
AROMAT.	1053 PPMC	2733 PPMC	.0092	2875 PPMC	.0096
PARAFS.	1717 PPMC	4456 PPMC	.0170	4688 PPMC	.0179
NOX	487 PPM	1264 PPM	.0153	1330 PPM	.0161
CO	1.19 PCT	3.09 PCT	.2274	3.25 PCT	.2392
CO2	4.60 PCT	11.94 PCT	1.3808	12.56 PCT	1.4528
O2	.60 PCT	1.56 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

1-2 NO LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 15-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	FULL
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	4000	87.	.938
SAMP	2855	84.	.948
CARB	2843	72.	.987

ODOMETER	41051
TEST MILES	8.400
TEST MINUTES	26.79
CALC. MILES/HR	18.81
COUNT RATIO	1.004
AVE. COUNTS/MIN	283.3
CUB. FT./COUNT	.349
SCF AIR/MILE	113.2

LICENSE NO.	6470CJ
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	.00/7.00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	11/ 7/66
TIME	10.25
GVW, LB	7500
LOAD, LB	2850
PER CENT LOAD	100
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	40 F
PRESSURE	29.26 IN.
HUMIDITY	89 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.387
MILES/GALLON	9.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.13
DILUTION RATIO	2.447
EXH/AIR RATIO	.960
SCF EXH/MILE	108.6
MILES/GALLON	9.2

IDLE

DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	475

ROUTE	ROAD-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2420 PPMC	5777 PPMC	.0226	5923 PPMC	.0231
HC FID					
TOTAL	4328 PPMC	10332 PPMC	.0404	10592 PPMC	.0414
OLEFINS	1011 PPMC	2414 PPMC	.0094	2474 PPMC	.0097
AROMAT.	1180 PPMC	2817 PPMC	.0100	2888 PPMC	.0103
PARAFS.	2137 PPMC	5102 PPMC	.0209	5230 PPMC	.0214
NOX	571 PPM	1363 PPM	.0177	1397 PPM	.0181
CO	1.30 PCT	3.10 PCT	.2451	3.18 PCT	.2513
CO2	5.15 PCT	12.29 PCT	1.5256	12.60 PCT	1.5640
O2	.67 PCT	1.60 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

151 FULL LOAD.

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 15-2

ROAD OPN.	LOS ANGELES
VT. CLASS	2
LOAD	FULL
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	71.	.990
SAMP	2943	81.	.957
CARB	2909	78.	.967

ODOMETER	41074
TEST MILES	8.400
TEST MINUTES	26.40
CALC. MILES/HR	19.09
COUNT RATIO	1.012
AVE. COUNTS/MIN	283.3
CUB. FT./COUNT	.349
SCF AIR/MILE	112.9

LICENSE NO.	6470CJ
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	.00/7.00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	11/ 7/66
TIME	1.01
GVW, LB	7500
LOAD, LB	2850
PER CENT LOAD	100
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	48 F
PRESSURE	29.21 IN.
HUMIDITY	96 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.406
MILES/GALLON	9.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.23
DILUTION RATIO	2.490
EXH/AIR RATIO	.957
SCF EXH/MILE	108.1
MILES/GALLON	9.3

IDLE

DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	19.2
RPM	475

ROUTE	ROAD-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2420 PPMC	5821 PPMC	.0226	6027 PPMC	.0234
HC FID					
TOTAL	4290 PPMC	10320 PPMC	.0401	10683 PPMC	.0415
OLEFINS	959 PPMC	2307 PPMC	.0090	2388 PPMC	.0093
AROMAT.	1186 PPMC	2853 PPMC	.0101	2954 PPMC	.0105
PARAFS.	2145 PPMC	5160 PPMC	.0210	5342 PPMC	.0218
NOx	529 PPM	1273 PPM	.0164	1317 PPM	.0170
CO	1.17 PCT	2.81 PCT	.2212	2.91 PCT	.2290
CO2	5.13 PCT	12.34 PCT	1.5240	12.78 PCT	1.5777
O2	.70 PCT	1.68 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

152 FULL LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 16-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	4000	80.	.960
SAMP	1999	90.	.929
CARB	2012	75.	.977

ODOMETER	9342
TEST MILES	8.400
TEST MINUTES	24.21
CALC. MILES/HR	20.82
COUNT RATIO	.994
AVE. COUNTS/MIN	283.3
CUB. FT./COUNT	.340
SCF AIR/MILE	76.2

LICENSE NO.	338D34
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	3M/
AXLE RATIO	.00/4.57
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	11/ 8/66
TIME	9.06
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.3

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	29.08 IN.
HUMIDITY	80 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.068
MILES/GALLON	14.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.38
DILUTION RATIO	3.098
EXH/AIR RATIO	.954
SCF EXH/MILE	72.8
MILES/GALLON	14.0

IDLE

DWELL ANGLE	33
IGN. TIMING	-4.0
A/F RATIO	12.8
MAN. VAC.	18.9
RPM	525

ROUTE	ROAD-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1755 PPMC	5385 PPMC	.0141	5438 PPMC	.0142
HC FID					
TOTAL	3173 PPMC	9735 PPMC	.0255	9831 PPMC	.0257
OLEFINS	848 PPMC	2602 PPMC	.0068	2628 PPMC	.0069
AROMAT.	1023 PPMC	3139 PPMC	.0077	3170 PPMC	.0078
PARAFS.	1302 PPMC	3995 PPMC	.0110	4034 PPMC	.0111
NOX	578 PPM	1773 PPM	.0154	1791 PPM	.0156
CO	.82 PCT	2.52 PCT	.1331	2.54 PCT	.1344
CO_2	4.20 PCT	12.89 PCT	1.0708	13.01 PCT	1.0814
O2	.60 PCT	1.84 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	190
2	196
3	197
4	194
5	196
6	198
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 16-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	4000	82.	.954
SAMP	2235	92.	.923
CARB	2209	80.	.960

ODOMETER	9364
TEST MILES	8.400
TEST MINUTES	25.02
CALC. MILES/HR	20.14
COUNT RATIO	1.012
AVE. COUNTS/MIN	283.3
CUB. FT./COUNT	.340
SCF AIR/MILE	82.2

LICENSE NO.	33AD34
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	3M/
AXLE RATIO	.00/4.57
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	11/ 8/66
TIME	10.45
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.3

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.08 IN.
HUMIDITY	79 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.850
MILES/GALLON	13.2

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.16
DILUTION RATIO	2.972
EXH/AIR RATIO	.959
SCF EXH/MILE	78.8
MILES/GALLON	12.7

IDLE	
DWELL ANGLE	33
IGN. TIMING	-4.0
A/F RATIO	12.8
MAN. VAC.	18.9
RPM	525

ROUTE	ROAD-2
TRAFFI	1
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2120 PPMC	6041 PPMC	.0171	6301 PPMC	.0179
HC FID					
TOTAL	3630 PPMC	10344 PPMC	.0293	10789 PPMC	.0306
OLEFINS	869 PPMC	2476 PPMC	.0070	2583 PPMC	.0073
AROMAT.	1095 PPMC	3120 PPMC	.0082	3255 PPMC	.0085
PARAFS.	1666 PPMC	4747 PPMC	.0141	4952 PPMC	.0147
NOX	501 PPM	1428 PPM	.0134	1489 PPM	.0140
CO	1.04 PCT	2.96 PCT	.1699	3.09 PCT	.1772
CO2	4.26 PCT	12.14 PCT	1.0933	12.66 PCT	1.1403
O2	.58 PCT	1.65 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	190
2	196
3	197
4	194
5	196
6	198
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 18-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	6000	78.	.967
SAMP	4124	80.	.960
CARB	4144	80.	.960

ODOMETER	18184
TEST MILES	8.400
TEST MINUTES	25.07
CALC. MILES/HR	20.10
COUNT RATIO	.995
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.347
SCF AIR/MILE	156.2

LICENSE NO.	2543CP
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	11/10/66
TIME	9.40
GVW, LB	20000
LOAD, LB	8075
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.7

AMBIENT CONDITIONS

TEMP.	52 F
PRESSURE	28.81 IN.
HUMIDITY	95 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.465
MILES/GALLON	7.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.45
DILUTION RATIO	2.659
EXH/AIR RATIO	.953
SCF EXH/MILE	148.8
MILES/GALLON	6.8

IDLE

DWELL ANGLE	29
IGN. TIMING	-12.0
A/F RATIO	12.9
MAN. VAC.	18.8
RPM	560

ROUTE	ROAD-3
TRAFFIC	1
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2700 PPMC	6655 PPMC	.0356	7179 PPMC	.0384
HC FID					
TOTAL	4125 PPMC	10167 PPMC	.0544	10968 PPMC	.0587
OLEFINS	871 PPMC	2147 PPMC	.0115	2316 PPMC	.0124
AROMAT.	1394 PPMC	3435 PPMC	.0172	3706 PPMC	.0186
PARAFS.	1860 PPMC	4584 PPMC	.0257	4945 PPMC	.0278
NOX	918 PPM	2263 PPM	.0402	2441 PPM	.0434
CO	.89 PCT	2.19 PCT	.2374	2.37 PCT	.2561
CO2	4.93 PCT	12.15 PCT	2.0658	13.11 PCT	2.2285
O2	.96 PCT	2.37 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	155
3	151
4	143
5	142
6	158
7	155
8	145

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 18-3

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	2
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	6000	64.	1.014
SAMP	4139	67.	1.003
CARB	4152	73.	.983

ODOMETER	18208
TEST MILES	8.400
TEST MINUTES	25.57
CALC. MILES/HR	19.71
COUNT RATIO	.997
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.347
SCF AIR/MILE	160.1

LICENSE NO.	2543CP
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	11/10/66
TIME	1.08
GVW, LB	20000
LOAD, LB	8075
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.7

AMBIENT CONDITIONS

TEMP.	54 F
PRESSURE	28.81 IN.
HUMIDITY	93 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.465
MILES/GALLON	7.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.51
DILUTION RATIO	2.613
EXH/AIR RATIO	.952
SCF EXH/MILE	152.4
MILES/GALLON	6.7

IDLE

DWELL ANGLE	29
IGN. TIMING	-12.0
A/F RATIO	12.9
MAN. VAC.	18.8
RPM	560

ROUTE	ROAD-3
TRAFFI	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2620 PPMC	6457 PPMC	.0354	6847 PPMC	.0375
HC FID TOTAL	4105 PPMC	10117 PPMC	.0554	10727 PPMC	.0588
OLEFINS	835 PPMC	2058 PPMC	.0113	2182 PPMC	.0119
AROMAT.	1366 PPMC	3367 PPMC	.0172	3570 PPMC	.0182
PARAFS.	1904 PPMC	4693 PPMC	.0270	4976 PPMC	.0286
NOX	974 PPM	2401 PPM	.0437	2545 PPM	.0463
CO	.85 PCT	2.09 PCT	.2321	2.22 PCT	.2461
CO2	5.04 PCT	12.42 PCT	2.1621	13.17 PCT	2.2925
O2	1.04 PCT	2.56 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	155
3	151
4	143
5	142
6	158
7	155
8	145

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 19-2

ROAD OPN. LOS ANGELES
WT. CLASS 4
LOAD FULL
TRUCK MAKE CHEV
FLOW ELEM. 6
TRUCK NUMBER 1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	10000	70.	.993
SAMP	5940	76.	.973
CARB	6108	76.	.973

ODOMETER	3640
TEST MILES	9.140
TEST MINUTES	27.35
CALC. MILES/HR	20.05
COUNT RATIO	.972
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.357
SCF AIR/MILE	226.9

LICENSE NO.	14M52
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	11/12/66
TIME	11.28
GVW, LB	30000
LOAD, LB	22000
PER CENT LOAD	100
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP. 42 F
PRESSURE 29.46 IN.
HUMIDITY 70 PCT

FROM NITROGEN COUNTS

DILUTION RATIO 2.718

MILES/GALLON 5.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.71
DILUTION RATIO	2.940
EXH/AIR RATIO	.948
SCF EXH/MILE	215.1
MILES/GALLON	4.9

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	500

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1660 PPMC	4512 PPMC	.0349	4881 PPMC	.0378
HC FID					
TOTAL	2833 PPMC	7700 PPMC	.0596	8330 PPMC	.0644
OLEFINS	550 PPMC	1495 PPMC	.0116	1617 PPMC	.0125
AROMAT.	843 PPMC	2291 PPMC	.0163	2479 PPMC	.0176
PARAFS.	1440 PPMC	3914 PPMC	.0318	4234 PPMC	.0344
NOX	807 PPM	2193 PPM	.0563	2373 PPM	.0609
CO	.61 PCT	1.66 PCT	.2593	1.79 PCT	.2805
CO2	4.53 PCT	12.31 PCT	3.0253	13.32 PCT	3.2729
O2	.90 PCT	2.45 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	177
2	172
3	181
4	175
5	171
6	176
7	172
8	174

192 FULL LOAD.

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 19-3

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	FULL
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	1
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	72.	.987
SAMP	6242	79.	.964
CARB	6262	79.	.964

ODOMETER	3664
TEST MILES	9.140
TEST MINUTES	26.80
CALC. MILES/HR	20.46
COUNT RATIO	.997
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.357
SCF AIR/MILE	230.3

LICENSE NO.	14M52
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	11/12/66
TIME	1.54
GVW, LB	30000
LOAD, LB	22000
PER CENT LOAD	100
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	46 F
PRESSURE	29.46 IN.
HUMIDITY	60 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.640
MILES/GALLON	5.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.76
DILUTION RATIO	2.846
EXH/AIR RATIO	.947
SCF EXH/MILE	218.1
MILES/GALLON	4.9

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	500

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1690 PPMC	4462 PPMC	.0350	4809 PPMC	.0377
HC FID					
TOTAL	2865 PPMC	7564 PPMC	.0593	8153 PPMC	.0640
OLEFINS	627 PPMC	1655 PPMC	.0130	1784 PPMC	.0140
AROMAT.	839 PPMC	2215 PPMC	.0160	2388 PPMC	.0172
PARAFS.	1399 PPMC	3694 PPMC	.0304	3981 PPMC	.0328
NOX	849 PPM	2242 PPM	.0584	2416 PPM	.0629
CO	.60 PCT	1.58 PCT	.2512	1.71 PCT	.2708
CO2	4.69 PCT	12.38 PCT	3.0851	13.35 PCT	3.3253
O2	.91 PCT	2.40 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	177
2	172
3	181
4	175
5	171
6	176
7	172
8	174

193 FULL LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 20-1

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	NONE
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	62.	1.021
SAMP	4210	63.	1.017
CARB	4211	70.	.993

ODOMETER	3687
TEST MILES	9.140
TEST MINUTES	26.52
CALC. MILES/HR	20.68
COUNT RATIO	1.000
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.357
SCF AIR/MILE	159.8

LICENSE NO.	14M52
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	11/12/66
TIME	5.00
GVW, LB	30000
LOAD, LB	0
PER CENT LOAD	0
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	39 F
PRESSURE	29.46 IN.
HUMIDITY	67 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.383
MILES/GALLON	7.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.96
DILUTION RATIO	3.639
EXH/AIR RATIO	.944
SCF EXH/MILE	150.8
MILES/GALLON	7.1

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.3
RPM	500

ROUTE	ROAD-4
TRAFFIC	2

RPM/MPH

HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1422 PPMC	4811 PPMC	.0261	5175 PPMC	.0281
HC FID					
TOTAL	2472 PPMC	8364 PPMC	.0453	8996 PPMC	.0488
OLEFINS	489 PPMC	1655 PPMC	.0090	1780 PPMC	.0096
AROMAT.	769 PPMC	2602 PPMC	.0130	2799 PPMC	.0140
PARAFS.	1214 PPMC	4108 PPMC	.0234	4418 PPMC	.0251
NOX	390 PPM	1320 PPM	.0238	1419 PPM	.0256
CO	.39 PCT	1.32 PCT	.1446	1.42 PCT	.1556
CO2	3.69 PCT	12.49 PCT	2.1500	13.43 PCT	2.3126
O2	.90 PCT	3.05 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	177
2	172
3	181
4	175
5	171
6	176
7	172
8	174

201 NO LOAD.

8
1
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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 20-2

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	NONE
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	65.	1.010
SAMP	4202	69.	.997
CARB	4214	74.	.980

ODOMETER	3710
TEST MILES	9.140
TEST MINUTES	26.93
CALC. MILES/HR	20.36
COUNT RATIO	.997
AVE. COUNTS/MIN	277.6
CUR. FT./COUNT	.357
SCF AIR/MILE	157.8

LICENSE NO.	14M52
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	11/12/66
TIME	6.54
GVW, LB	30000
LOAD, LB	0
PER CENT LOAD	0
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	38 F
PRESSURE	29.46 IN.
HUMIDITY	68 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.413
MILES/GALLON	7.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.99
DILUTION RATIO	3.519
EXH/AIR RATIO	.943
SCF EXH/MILE	148.8
MILES/GALLON	7.2

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.3
RPM	500

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1522 PPMC	5194 PPMC	.0278	5355 PPMC	.0286
HC FID					
TOTAL	2560 PPMC	8736 PPMC	.0467	9008 PPMC	.0482
OLEFINS	532 PPMC	1815 PPMC	.0097	1872 PPMC	.0100
AROMAT.	709 PPMC	2420 PPMC	.0118	2495 PPMC	.0121
PARAFS.	1319 PPMC	4501 PPMC	.0253	4641 PPMC	.0260
NOX	383 PPM	1307 PPM	.0232	1348 PPM	.0239
CO	.39 PCT	1.33 PCT	.1439	1.37 PCT	.1484
CO2	3.82 PCT	13.04 PCT	2.2150	13.44 PCT	2.2839
O2	.90 PCT	3.07 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	177
2	172
3	181
4	175
5	171
6	176
7	172
8	174

202 NO LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 21-8

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	80.	.960
SAMP	4039	93.	.920
CARB	4046	72.	.987

ODOMETER	2974
TEST MILES	9.140
TEST MINUTES	26.99
CALC. MILES/HR	20.32
COUNT RATIO	.998
AVE. COUNTS/MIN	276.0
CUB. FT./COUNT	.349
SCF AIR/MILE	150.0

LICENSE NO.	1413CG
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	345
TRANSMISSION	5M/
AXLE RATIO	6.50/9.04
CARB. NO.	I3
DIST. NO.	I3
AIR CL. NO.	I2

DATE	11/14/66
TIME	2.15
GVW, LB	24000
LOAD, LB	7825
PER CENT LOAD	50
MAXIMUM BHP	197
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	45 F
PRESSURE	29.60 IN.
HUMIDITY	49 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.584
MILES/GALLON	7.3

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.66
DILUTION RATIO	3.584
EXH/AIR RATIO	.949
SCF EXH/MILE	142.3
MILES/GALLON	7.3

IDLE

DWELL ANGLE	26
IGN. TIMING	.0
A/F RATIO	12.8
MAN. VAC.	18.9
RPM	500

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	58.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	920 PPMC	3297 PPMC	.0169	3297 PPMC	.0169
HC FID					
TOTAL	1664 PPMC	5964 PPMC	.0305	5964 PPMC	.0305
OLEFINS	337 PPMC	1208 PPMC	.0062	1208 PPMC	.0062
AROMAT.	484 PPMC	1735 PPMC	.0081	1735 PPMC	.0081
PARAFS.	843 PPMC	3021 PPMC	.0162	3021 PPMC	.0162
NOX	487 PPM	1745 PPM	.0297	1745 PPM	.0297
CO	.54 PCT	1.94 PCT	.2003	1.94 PCT	.2003
CO2	3.78 PCT	13.55 PCT	2.2027	13.55 PCT	2.2027
O2	.52 PCT	1.86 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	172
3	162
4	164
5	168
6	161
7	165
8	165

DIL. RATIO FROM CO/CO2 CALCN. = 3.515 IS LOWER THAN 3.584 FROM NITROGEN COUNTS

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 21-9

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	73.	.983
SAMP	4154	88.	.935
CARB	4166	71.	.990

ODOMETER	2997
TEST MILES	9.140
TEST MINUTES	28.22
CALC. MILES/HR	19.43
COUNT RATIO	.997
AVE. COUNTS/MIN	276.0
CUB. FT./COUNT	.349
SCF AIR/MILE	155.0

LICENSE NO.	1413CG
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	345
TRANSMISSION	5M/
AXLE RATIO	6.50/9.04
CARB. NO.	I3
DIST. NO.	I3
AIR CL. NO.	I2

DATE	11/14/66
TIME	4.12
GVW, LB	24000
LOAD, LB	7825
PER CENT LOAD	50
MAXIMUM BHP	197
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	42 F
PRESSURE	29.60 IN.
HUMIDITY	54 PCT

	FROM NITROGEN COUNTS	FROM CO/CO2 CALCN.
		AIR/FUEL RATIO 13.55
DILUTION RATIO	3.531	DILUTION RATIO 3.531
		EXH/AIR RATIO .951
		SCF EXH/MILE 147.4
MILES/GALLON	6.9	MILES/GALLON 6.9

IDLE	
DWELL ANGLE	26
IGN. TIMING	.0
A/F RATIO	12.8
MAN. VAC.	18.9
RPM	500

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	58.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	960 PPMC	3389 PPMC	.0180	3389 PPMC	.0180
HC FID					
TOTAL	1833 PPMC	6472 PPMC	.0343	6472 PPMC	.0343
OLEFINS	393 PPMC	1388 PPMC	.0073	1388 PPMC	.0073
AROMAT.	417 PPMC	1472 PPMC	.0069	1472 PPMC	.0069
PARAFS.	1023 PPMC	3612 PPMC	.0201	3612 PPMC	.0201
NOX	455 PPM	1606 PPM	.0283	1606 PPM	.0283
CO	.63 PCT	2.22 PCT	.2384	2.22 PCT	.2384
CO2	3.89 PCT	13.73 PCT	2.3123	13.73 PCT	2.3123
O2	.50 PCT	1.77 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	172
3	162
4	164
5	168
6	161
7	165
8	165

DIL. RATIO FROM CO/CO2 CALCN. = 3.394 IS LOWER THAN 3.531 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 22-8

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10001	72.	.987
SAMP	4417	81.	.957
CARB	4412	72.	.987

ODOMETER	124976
TEST MILES	9.140
TEST MINUTES	25.58
CALC. MILES/HR	21.44
COUNT RATIO	1.001
AVE. COUNTS/MIN	276.0
CUB. FT./COUNT	.349
SCF AIR/MILE	161.7

LICENSE NO.	243D
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	351
TRANSMISSION	5M/
AXLE RATIO	5.57/8.85
CARB. NO.	G2
DIST. NO.	G4
AIR CL. NO.	G2

DATE	11/16/66
TIME	2.30
GVW, LB	26000
LOAD, LB	8000
PER CENT LOAD	50
MAXIMUM BHP	195
CL.MASK, SQ. IN.	.0
PCV, CFM	.0
	.0

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	29.36 IN.
HUMIDITY	49 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.334
MILES/GALLON	7.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.47
DILUTION RATIO	3.795
EXH/AIR RATIO	.953
SCF EXH/MILE	154.0
MILES/GALLON	6.7

IDLE

DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	12.8
MAN. VAC.	18.0
RPM	560

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	55.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1030 PPMC	3334 PPMC	.0185	3795 PPMC	.0210
HC FID					
TOTAL	1931 PPMC	6437 PPMC	.0357	7329 PPMC	.0406
OLEFINS	428 PPMC	1427 PPMC	.0079	1624 PPMC	.0090
AROMAT.	671 PPMC	2237 PPMC	.0116	2547 PPMC	.0133
PARAFS.	832 PPMC	2774 PPMC	.0161	3158 PPMC	.0183
NOX	431 PPM	1437 PPM	.0264	1636 PPM	.0301
CO	.61 PCT	2.03 PCT	.2277	2.32 PCT	.2593
CO2	3.46 PCT	11.53 PCT	2.0294	13.13 PCT	2.3104
O2	.83 PCT	2.77 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	153
2	156
3	156
4	146
5	142
6	160
7	0
8	0

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 22-9

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	96.	.911
SAMP	4558	117.	.852
CARB	4571	72.	.987

ODOMETER	124993
TEST MILES	9.140
TEST MINUTES	28.21
CALC. MILES/HR	19.44
COUNT RATIO	.997
AVE. COUNTS/MIN	276.0
CUB. FT./COUNT	.349
SCF AIR/MILE	167.5

LICENSE NO.	243D
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	351
TRANSMISSION	5M/
AXLE RATIO	5.57/8.85
CARB. NO.	G2
DIST. NO.	G4
AIR CL. NO.	G2

DATE	11/16/66
TIME	4.07
GVW, LB	26000
LOAD, LB	8000
PER CENT LOAD	50
MAXIMUM BHP	195
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	57 F
PRESSURE	29.36 IN.
HUMIDITY	51 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.345
MILES/GALLON	7.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.48
DILUTION RATIO	3.692
EXH/AIR RATIO	.952
SCF EXH/MILE	159.5
MILES/GALLON	6.5

IDLE

DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	12.8
MAN. VAC.	18.0
RPM	560

ROUTE	ROAD-4
TRAFFI	3

RPM/MPH

HIGH GEAR	55.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1040 PPMC	3479 PPMC	.0200	3839 PPMC	.0220
HC FID					
TOTAL	1931 PPMC	6460 PPMC	.0371	7129 PPMC	.0409
OLEFINS	428 PPMC	1432 PPMC	.0082	1580 PPMC	.0091
AROMAT.	521 PPMC	1743 PPMC	.0091	1923 PPMC	.0100
PARAFS.	982 PPMC	3285 PPMC	.0198	3625 PPMC	.0218
NOX	556 PPM	1860 PPM	.0354	2053 PPM	.0391
CO	.62 PCT	2.07 PCT	.2406	2.29 PCT	.2655
CO2	3.56 PCT	11.91 PCT	2.1703	13.14 PCT	2.3951
O2	.90 PCT	3.01 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	153
2	156
3	156
4	146
5	142
6	160
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 23-8

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	64.	1.014
SAMP	4403	72.	.987
CARB	4386	99.	.902

ODOMETER	4092
TEST MILES	9.140
TEST MINUTES	26.39
CALC. MILES/HR	20.78
COUNT RATIO	1.004
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.347
SCF AIR/MILE	145.6

LICENSE NO.	11M821
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	.00/6.50
CARB. NO.	F10
DIST. NO.	F10
AIR CL. NO.	F4

DATE	11/17/66
TIME	1.58
GVW, LB	25500
LOAD, LB	7250
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	51 F
PRESSURE	29.32 IN.
HUMIDITY	86 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.334
MILES/GALLON	7.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.40
DILUTION RATIO	3.394
EXH/AIR RATIO	.954
SCF EXH/MILE	138.9
MILES/GALLON	7.0

IDLE

DWELL ANGLE	0
IGN. TIMING	-10.0
A/F RATIO	.0
MAN. VAC.	19.0
RPM	520

ROUTE	ROAD-4
TRAFFIC	2

RPM/MPH

HIGH GEAR	56.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3400 PPMC	11336 PPMC	.0566	11538 PPMC	.0576
HC FID					
TOTAL	5055 PPMC	16853 PPMC	.0842	17155 PPMC	.0857
OLEFINS	581 PPMC	1937 PPMC	.0097	1972 PPMC	.0098
AROMAT.	1487 PPMC	4958 PPMC	.0223	5046 PPMC	.0227
PARAFS.	2987 PPMC	9959 PPMC	.0522	10137 PPMC	.0531
NOX	564 PPM	1880 PPM	.0312	1914 PPM	.0317
CO	.74 PCT	2.47 PCT	.2491	2.51 PCT	.2536
CO2	3.84 PCT	12.80 PCT	2.0309	13.03 PCT	2.0672
O2	.53 PCT	1.77 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	148
2	156
3	154
4	149
5	148
6	153
7	154
8	147

238 CARB. HAS FUEL FLOODING DEVICE ON DECEL. TO PREVENT BACKFIRE.

8-STR

B-N1

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 23-9

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	69.	.997
SAMP	4294	78.	.967
CARB	4409	105.	.885

ODOMETER	4115
TEST MILES	9.140
TEST MINUTES	26.95
CALC. MILES/HR	20.35
COUNT RATIO	.974
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.347
SCF AIR/MILE	143.5

LICENSE NO.	11M821
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	.00/6.50
CARB. NO.	F10
DIST. NO.	F10
AIR CL. NO.	F4

DATE	11/17/66
TIME	3.40
GVW, LB	25500
LOAD, LB	7250
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	53 F
PRESSURE	29.32 IN.
HUMIDITY	83 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.401
MILES/GALLON	7.2

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.45
DILUTION RATIO	3.401
EXH/AIR RATIO	.953
SCF EXH/MILE	136.7
MILES/GALLON	7.2

IDLE	
DWELL ANGLE	0
IGN. TIMING	-10.0
A/F RATIO	.0
MAN. VAC.	19.0
RPM	520

ROUTE	ROAD-4
TRAFFI	2
RPM/MPH	
HIGH GEAR	56.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2950 PPMC	10032 PPMC	.0493	10032 PPMC	.0493
HC FID					
TOTAL	4360 PPMC	14827 PPMC	.0729	14827 PPMC	.0729
OLEFINS	525 PPMC	1785 PPMC	.0088	1785 PPMC	.0088
AROMAT.	1335 PPMC	4540 PPMC	.0203	4540 PPMC	.0203
PARAFS.	2500 PPMC	8502 PPMC	.0438	8502 PPMC	.0438
NOX	603 PPM	2051 PPM	.0335	2051 PPM	.0335
CO	.70 PCT	2.38 PCT	.2366	2.38 PCT	.2366
CO2	3.87 PCT	13.16 PCT	2.0554	13.16 PCT	2.0554
O2	.50 PCT	1.70 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	148
2	156
3	154
4	149
5	148
6	153
7	154
8	147

DIL. RATIO FROM CO/CO2 CALCN. = 3.387 IS LOWER THAN 3.401 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 24-1

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	10000	60.	1.028
SAMP	5383	71.	.990
CARB	5407	93.	.920

ODOMETER	21343
TEST MILES	9.140
TEST MINUTES	25.20
CALC. MILES/HR	21.76
COUNT RATIO	.996
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.347
SCF AIR/MILE	187.1

LICENSE NO.	11M806
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	477
TRANSMISSION	5M/
AXLE RATIO	7.20/ .00
CARB. NO.	F12
DIST. NO.	F12
AIR CL. NO.	F4

DATE	11/19/66
TIME	9.41
GVW, LB	41000
LOAD, LB	12000
PER CENT LOAD	50
MAXIMUM BHP	222
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	31 F
PRESSURE	29.76 IN.
HUMIDITY	66 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.929
MILES/GALLON	5.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.93
DILUTION RATIO	2.929
EXH/AIR RATIO	.964
SCF EXH/MILE	180.3
MILES/GALLON	5.3

IDLE	
DWELL ANGLE	27
IGN. TIMING	-8.0
A/F RATIO	.0
MAN. VAC.	18.8
RPM	520

ROUTE	ROAD-4
TRAFFIC	1
RPM/MPH	
HIGH GEAR	48.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1540 PPMC	4511 PPMC	.0292	4511 PPMC	.0292
HC FID					
TOTAL	3036 PPMC	8893 PPMC	.0576	8893 PPMC	.0576
OLEFINS	386 PPMC	1131 PPMC	.0073	1131 PPMC	.0073
AROMAT.	1159 PPMC	3395 PPMC	.0206	3395 PPMC	.0206
PARAFS.	1491 PPMC	4367 PPMC	.0297	4367 PPMC	.0297
NOX	508 PPM	1488 PPM	.0320	1488 PPM	.0320
CO	1.30 PCT	3.81 PCT	.4991	3.81 PCT	.4991
CO2	4.35 PCT	12.74 PCT	2.6236	12.74 PCT	2.6236
O2	.49 PCT	1.44 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	159
2	150
3	152
4	153
5	144
6	151
7	150
8	156

DIL. RATIO FROM CO/CO2 CALCN. = 2.825 IS LOWER THAN 2.929 FROM NITROGEN COUNTS

24-8-47

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 24-2

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	56.	1.042
SAMP	5479	58.	1.035
CARB	5542	92.	.923

ODOMETER	21365
TEST MILES	9.140
TEST MINUTES	25.09
CALC. MILES/HR	21.86
COUNT RATIO	.989
AVE. COUNTS/MIN	277.6
CUR. FT./COUNT	.347
SCF AIR/MILE	192.3

LICENSE NO.	11M806
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	477
TRANSMISSION	5M/
AXLE RATIO	7.20/ .00
CARB. NO.	F12
DIST. NO.	F12
AIR CL. NO.	F4

DATE	11/19/66
TIME	11.27
GVW, LB	41000
LOAD, LB	12000
PER CENT LOAD	50
MAXIMUM BHP	222
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	35 F
PRESSURE	29.76 IN.
HUMIDITY	65 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.838
MILES/GALLON	5.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.92
DILUTION RATIO	2.838
EXH/AIR RATIO	.964
SCF EXH/MILE	185.3
MILES/GALLON	5.3

IDLE

DWELL ANGLE	27
IGN. TIMING	-8.0
A/F RATIO	.0
MAN. VAC.	18.7
RPM	560

ROUTE	ROAD-4
TRAFFI	2
RPM/MPH	
HIGH GEAR	48.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1620 PPMC	4597 PPMC	.0306	4597 PPMC	.0306
HC FID					
TOTAL	3180 PPMC	9025 PPMC	.0601	9025 PPMC	.0601
OLEFINS	410 PPMC	1164 PPMC	.0077	1164 PPMC	.0077
AROMAT.	1086 PPMC	3082 PPMC	.0190	3082 PPMC	.0190
PARAFS.	1684 PPMC	4779 PPMC	.0334	4779 PPMC	.0334
NOX	522 PPM	1481 PPM	.0328	1481 PPM	.0328
CO	1.32 PCT	3.75 PCT	.5047	3.75 PCT	.5047
CO2	4.38 PCT	12.43 PCT	2.6310	12.43 PCT	2.6310
O2	.43 PCT	1.22 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	159
2	150
3	152
4	153
5	144
6	151
7	150
8	156

DIL. RATIO FROM CO/CO2 CALCN. = 2.802 IS LOWER THAN 2.838 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 25-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	3
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	67.	1.003
SAMP	2035	72.	.987
CARB	2050	60.	1.028

ODOMETER	9943
TEST MILES	8.400
TEST MINUTES	27.71
CALC. MILES/HR	18.19
COUNT RATIO	.993
AVE. COUNTS/MIN	276.1
CUB. FT./COUNT	.349
SCF AIR/MILE	86.6

LICENSE NO.	7601CZ
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	2A/
AXLE RATIO	.00/3.73
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	11/19/66
TIME	2.32
GVW. LB	5000
LOAD. LB	725
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK. SQ. IN.	8.0
PCV. CFM	1.6

AMBIENT CONDITIONS

TEMP.	36 F
PRESSURE	29.76 IN.
HUMIDITY	62 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.749
MILES/GALLON	12.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.45
DILUTION RATIO	2.813
EXH/AIR RATIO	.953
SCF EXH/MILE	82.5
MILES/GALLON	12.4

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	13.3
MAN. VAC.	18.5
RPM	520

ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	43.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1590 PPMC	4372 PPMC	.0130	4473 PPMC	.0133
HC FID					
TOTAL	3292 PPMC	9051 PPMC	.0269	9261 PPMC	.0275
OLEFINS	522 PPMC	1435 PPMC	.0043	1468 PPMC	.0044
AROMAT.	1108 PPMC	3046 PPMC	.0084	3117 PPMC	.0086
PARAFS.	1662 PPMC	4569 PPMC	.0142	4676 PPMC	.0146
NOX	647 PPM	1779 PPM	.0175	1820 PPM	.0179
CO	.84 PCT	2.31 PCT	.1386	2.36 PCT	.1418
CO2	4.66 PCT	12.81 PCT	1.2079	13.11 PCT	1.2360
O2	1.03 PCT	2.83 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	164
2	169
3	174
4	175
5	172
6	170
7	0
8	0

8-49

B-52

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 25-2

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	3
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3501	77.	.970
SAMP	1984	78.	.967
CARB	1997	53.	1.053

ODOMETER	9967
TEST MILES	8.400
TEST MINUTES	27.19
CALC. MILES/HR	18.54
COUNT RATIO	.993
AVE. COUNTS/MIN	335.6
CUR. FT./COUNT	.287
SCF AIR/MILE	70.9

LICENSE NO.	7601CZ
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	2A/
AXLE RATIO	.00/3.73
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	11/21/66
TIME	9.17
GVW, LB	5000
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	27 F
PRESSURE	29.66 IN.
HUMIDITY	90 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.771
MILES/GALLON	16.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.54
DILUTION RATIO	2.940
EXH/AIR RATIO	.951
SCF EXH/MILE	67.5
MILES/GALLON	15.4

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	13.3
MAN. VAC.	18.5
RPM	560

ROUTE	ROAD-1
TRAFFI	1

RPM/MPH

HIGH GEAR	43.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1440 PPMC	3990 PPMC	.0097	4233 PPMC	.0103
HC FID					
TOTAL	2914 PPMC	8073 PPMC	.0196	8566 PPMC	.0208
OLEFINS	476 PPMC	1319 PPMC	.0032	1390 PPMC	.0034
AROMAT.	886 PPMC	2455 PPMC	.0054	2605 PPMC	.0058
PARAFS.	1552 PPMC	4300 PPMC	.0109	4562 PPMC	.0116
NOX	550 PPM	1524 PPM	.0123	1617 PPM	.0130
CO	.73 PCT	2.02 PCT	.0992	2.15 PCT	.1052
CO2	4.49 PCT	12.44 PCT	.9584	13.20 PCT	1.0169
O2	1.02 PCT	2.83 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	164
2	169
3	174
4	175
5	172
6	170
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 26-8

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	2
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	10000	85.	.945
SAMP	5928	102.	.894
CARB	5938	112.	.866

ODOMETER	3832
TEST MILES	9.140
TEST MINUTES	26.60
CALC. MILES/HR	20.62
COUNT RATIO	.998
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.347
SCF AIR/MILE	191.4

LICENSE NO.	12M917
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	391
TRANSMISSION	5M/
AXLE RATIO	6.65/9.13
CARB. NO.	F11
DIST. NO.	F11
AIR CL. NO.	F4

DATE	11/22/66
TIME	11.38
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	2.1

AMBIENT CONDITIONS	
TEMP.	46 F
PRESSURE	29.57 IN.
HUMIDITY	72 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.783
MILES/GALLON	5.2

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.79
DILUTION RATIO	2.783
EXH/AIR RATIO	.967
SCF EXH/MILE	185.0
MILES/GALLON	5.2

IDLE	
DWELL ANGLE	25
IGN. TIMING	-8.0
A/F RATIO	12.5
MAN. VAC.	19.2
RPM	520

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	55.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2260 PPMC	6289 PPMC	.0418	6289 PPMC	.0418
HC FID					
TOTAL	3676 PPMC	10230 PPMC	.0681	10230 PPMC	.0681
OLEFINS	338 PPMC	941 PPMC	.0063	941 PPMC	.0063
AROMAT.	1315 PPMC	3659 PPMC	.0225	3659 PPMC	.0225
PARAFS.	2023 PPMC	5630 PPMC	.0393	5630 PPMC	.0393
NOX	473 PPM	1316 PPM	.0291	1316 PPM	.0291
CO	1.48 PCT	4.12 PCT	.5540	4.12 PCT	.5540
CO2	4.42 PCT	12.30 PCT	2.5995	12.30 PCT	2.5995
O2	.35 PCT	.97 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	162
2	160
3	161
4	162
5	165
6	160
7	155
8	157

DIL. RATIO FROM CO/CO2 CALCN. = 2.728 IS LOWER THAN 2.783 FROM NITROGEN COUNTS

19-68

B-52

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 26-9

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	91.	.926
SAMP	6050	100.	.900
CARB	6052	110.	.871

ODOMETER	3856
TEST MILES	9.140
TEST MINUTES	27.79
CALC. MILES/HR	19.73
COUNT RATIO	1.000
AVE. COUNTS/MIN	277.6
CUB. FT./COUNT	.347
SCF AIR/MILE	196.1

LICENSE NO.	12M917
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	391
TRANSMISSION	5M/
AXLE RATIO	6.65/9.13
CARB. NO.	F11
DIST. NO.	F11
AIR CL. NO.	F4

DATE	11/22/66
TIME	1.33
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	2.1

AMBIENT CONDITIONS

TEMP.	52 F
PRESSURE	29.57 IN.
HUMIDITY	63 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.702
MILES/GALLON	5.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.88
DILUTION RATIO	2.702
EXH/AIR RATIO	.965
SCF EXH/MILE	189.2
MILES/GALLON	5.1

IDLE

DWELL ANGLE	25
IGN. TIMING	-8.0
A/F RATIO	12.5
MAN. VAC.	19.2
RPM	520

ROUTE	ROAD-4
TRAFF.C	2
RPM/MPH	
HIGH GEAR	55.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2230 PPMC	6025 PPMC	.0410	6025 PPMC	.0410
HC FID					
TOTAL	3670 PPMC	9916 PPMC	.0675	9916 PPMC	.0675
OLEFINS	317 PPMC	856 PPMC	.0058	856 PPMC	.0058
AROMAT.	1378 PPMC	3723 PPMC	.0236	3723 PPMC	.0236
PARAFS.	1975 PPMC	5336 PPMC	.0381	5336 PPMC	.0381
NOX	536 PPM	1448 PPM	.0327	1448 PPM	.0327
CO	1.43 PCT	3.86 PCT	.5315	3.86 PCT	.5315
CO2	4.60 PCT	12.43 PCT	2.6861	12.43 PCT	2.6861
O2	.43 PCT	1.16 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	162
2	160
3	161
4	162
5	165
6	160
7	155
8	157

DIL. RATIO FROM CO/CO2 CALCN. = 2.654 IS LOWER THAN 2.702 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 27-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	3804	63.	1.017
SAMP	2257	72.	.987
CARB	2237	82.	.954

ODOMETER	7935
TEST MILES	8.400
TEST MINUTES	25.01
CALC. MILES/HR	20.15
COUNT RATIO	1.009
AVE. COUNTS/MIN	277.9
CUB. FT./COUNT	.347
SCF AIR/MILE	86.2

LICENSE NO.	6477CZ
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	.00/4.57
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	11/22/66
TIME	3.34
GVW. LB	7500
LOAD. LB	1500
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK. SQ. IN.	4.9
PCV. CFM	2.0

AMBIENT CONDITIONS

TEMP.	53 F
PRESSURE	29.57 IN.
HUMIDITY	64 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.738
MILES/GALLON	12.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.74
DILUTION RATIO	2.923
EXH/AIR RATIO	.968
SCF EXH/MILE	83.5
MILES/GALLON	11.6

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	12.7
MAN. VAC.	18.3
RPM	450

ROUTE	ROAD-2
TRAFFIC	3

RPM/MPH

HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2400 PPMC	6571 PPMC	.0197	7015 PPMC	.0211
HC FID					
TOTAL	4310 PPMC	11801 PPMC	.0356	12598 PPMC	.0378
OLEFINS	510 PPMC	1396 PPMC	.0042	1491 PPMC	.0045
AROMAT.	1303 PPMC	3568 PPMC	.0097	3808 PPMC	.0104
PARAFF.	2497 PPMC	6837 PPMC	.0215	7298 PPMC	.0230
NOX	425 PPM	1164 PPM	.0116	1242 PPM	.0124
CO	1.42 PCT	3.89 PCT	.2359	4.15 PCT	.2519
CO2	4.10 PCT	11.23 PCT	1.0703	11.98 PCT	1.1426
O2	.97 PCT	2.66 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	163
2	163
3	163
4	166
5	165
6	163
7	0
8	0

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 27-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	3801	67.	1.003
SAMP	2283	75.	.977
CARB	2268	82.	.954

ODOMETER	7957
TEST MILES	A.400
TEST MINUTES	26.01
CALC. MILES/HR	19.38
COUNT RATIO	1.007
AVE. COUNTS/MIN	277.9
CUB. FT./COUNT	.347
SCF AIR/MILE	87.5

LICENSE NO.	6477C2
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	.00/4.57
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	11/22/66
TIME	4.50
GVW. LB	7500
LOAD. LB	1500
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK. SQ. IN.	4.9
PCV. CFM	2.0

AMBIENT CONDITIONS

TEMP.	51 F
PRESSURE	29.57 IN.
HUMIDITY	66 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.711
MILES/GALLON	12.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.82
DILUTION RATIO	2.878
EXH/AIR RATIO	.966
SCF EXH/MILE	84.5
MILES/GALLON	11.5

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	12.7
MAN. VAC.	18.3
RPM	450

ROUTE	ROAD-2
TRAFFI	3
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2400 PPMC	6506 PPMC	.0198	6907 PPMC	.0210
HC FID					
TOTAL	4330 PPMC	11737 PPMC	.0357	12462 PPMC	.0379
OLEFINS	733 PPMC	1987 PPMC	.0060	2110 PPMC	.0064
AROMAT.	1124 PPMC	3047 PPMC	.0083	3235 PPMC	.0088
PARAFS.	2473 PPMC	6704 PPMC	.0214	7117 PPMC	.0227
NOX	501 PPM	1358 PPM	.0137	1442 PPM	.0145
CO	1.37 PCT	3.71 PCT	.2281	3.94 PCT	.2422
CO2	4.21 PCT	11.41 PCT	1.1014	12.12 PCT	1.1694
O2	.63 PCT	1.71 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	163
2	163
3	163
4	166
5	165
6	163
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 28-1

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	10000	75.	.977
SAMP	6247	87.	.938
CARB	6241	114.	.860

ODOMETER	25042
TEST MILES	9.140
TEST MINUTES	27.15
CALC. MILES/HR	20.20
COUNT RATIO	1.001
AVE. COUNTS/MIN	277.9
CUB. FT./COUNT	.347
SCF AIR/MILE	195.5

LICENSE NO.	2576CD
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	450
TRANSMISSION	5M/
AXLE RATIO	.00/7.17
CARB. NO.	I4
DIST. NO.	I4
AIR CL. NO.	I3

DATE	11/25/66
TIME	9.28
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	1.5

AMBIENT CONDITIONS

TEMP.	54 F
PRESSURE	29.10 IN.
HUMIDITY	86 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.666
MILES/GALLON	4.9

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.17
DILUTION RATIO	2.666
EXH/AIR RATIO	.982
SCF EXH/MILE	192.0
MILES/GALLON	4.9

IDLE	
DWELL ANGLE	30
IGN. TIMING	-5.0
A/F RATIO	12.2
MAN. VAC.	18.7
RPM	480

ROUTE	ROAD-4
TRAFFIC	1
RPM/MPH	
HIGH GEAR	.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	885 PPMC	2359 PPMC	.0163	2359 PPMC	.0163
HC FID					
TOTAL	1960 PPMC	5225 PPMC	.0361	5225 PPMC	.0361
OLEFINS	676 PPMC	1802 PPMC	.0124	1802 PPMC	.0124
AROMAT.	491 PPMC	1309 PPMC	.0083	1309 PPMC	.0083
PARAFS.	793 PPMC	2114 PPMC	.0153	2114 PPMC	.0153
NOX	344 PPM	917 PPM	.0210	917 PPM	.0210
CO	2.18 PCT	5.81 PCT	.8112	5.81 PCT	.8112
CO2	4.33 PCT	11.54 PCT	2.5313	11.54 PCT	2.5313
O2	.28 PCT	.75 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	158
3	154
4	160
5	156
6	157
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.557 IS LOWER THAN 2.666 FROM NITROGEN COUNTS

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 28-8

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	87.	.938
SAMP	6066	91.	.926
CARB	6064	107.	.880

ODOMETER	25065
TEST MILES	9.140
TEST MINUTES	26.69
CALC. MILES/HR	20.55
COUNT RATIO	1.000
AVE. COUNTS/MIN	277.9
CUB. FT./COUNT	.347
SCF AIR/MILE	194.2

LICENSE NO.	2576CD
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	450
TRANSMISSION	5M/
AXLE RATIO	.00/7.17
CARB. NO.	I4
DIST. NO.	I4
AIR CL. NO.	I3

DATE	11/25/66
TIME	11.30
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	1.5

AMBIENT CONDITIONS

TEMP.	54 F
PRESSURE	29.10 IN.
HUMIDITY	86 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.670
MILES/GALLON	4.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.09
DILUTION RATIO	2.670
EXH/AIR RATIO	.984
SCF EXH/MILE	191.1
MILES/GALLON	4.9

IDLE

DWELL ANGLE	30
IGN. TIMING	-5.0
A/F RATIO	12.2
MAN. VAC.	18.7
RPM	480

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	975 PPMC	2604 PPMC	.0179	2604 PPMC	.0179
HC FID					
TOTAL	2090 PPMC	5581 PPMC	.0384	5581 PPMC	.0384
OLEFINS	689 PPMC	1840 PPMC	.0126	1840 PPMC	.0126
AROMAT.	561 PPMC	1498 PPMC	.0096	1498 PPMC	.0096
PARAFS.	840 PPMC	2243 PPMC	.0162	2243 PPMC	.0162
NOX	327 PPM	873 PPM	.0199	873 PPM	.0199
CO	2.23 PCT	5.95 PCT	.8273	5.95 PCT	.8273
CO2	4.23 PCT	11.30 PCT	2.4656	11.30 PCT	2.4656
O2	.28 PCT	.75 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	158
3	154
4	160
5	156
6	157
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.588 IS LOWER THAN 2.670 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 29-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	2
ROAD ROUTE	

	GAS TEMP. COUNT	DEG.	CORR.
NITR	3800	80.	.960
SAMP	2177	92.	.923
CAPB	2157	52.	1.057

ODOMETER	10953
TEST MILES	8.400
TEST MINUTES	31.21
CALC. MILES/HR	16.15
COUNT RATIO	1.009
AVE. COUNTS/MIN	278.6
CUB. FT./COUNT	.346
SCF AIR/MILE	90.7

LICENSE NO.	11M905
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	3M/
AXLE RATIO	.00/3.25
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	11/26/66
TIME	9.55
GVW, LB	5000
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	172
CL.MASK, SQ. IN.	6.0
PCV, CFM	2.1

AMBIENT CONDITIONS

TEMP.	40 F
PRESSURE	29.14 IN.
HUMIDITY	89 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.816
MILES/GALLON	10.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.90
DILUTION RATIO	2.816
EXH/AIR RATIO	.964
SCF EXH/MILE	87.5
MILES/GALLON	10.8

IDLE	
DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.1
MAN. VAC.	20.0
RPM	560
ROUTE	ROAD-1
TRAFFIC	2
RPM/MPH	
HIGH GEAR	37.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1725 PPMC	4858 PPMC	.0153	4858 PPMC	.0153
HC FID					
TOTAL	3787 PPMC	10664 PPMC	.0335	10664 PPMC	.0335
OLEFINS	1254 PPMC	3531 PPMC	.0111	3531 PPMC	.0111
AROMAT.	973 PPMC	2740 PPMC	.0079	2740 PPMC	.0079
PARAFS.	1560 PPMC	4393 PPMC	.0145	4393 PPMC	.0145
NOX	733 PPM	2064 PPM	.0216	2064 PPM	.0216
CO	1.40 PCT	3.94 PCT	.2506	3.94 PCT	.2506
CO_2	4.57 PCT	12.87 PCT	1.2854	12.87 PCT	1.2854
O_2	.90 PCT	2.53 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	159
2	168
3	144
4	149
5	166
6	167
7	161
8	160

DIL. RATIO FROM CO/CO2 CALCN. = 2.678 IS LOWER THAN 2.816 FROM NITROGEN COUNTS

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 29-2

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	2
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3800	79.	.964
SAMP	2373	80.	.932
CARB	2365	59.	1.031

ODOMETER	10977
TEST MILES	8.400
TEST MINUTES	28.95
CALC. MILES/HR	17.41
COUNT RATIO	1.003
AVE. COUNTS/MIN	278.6
CUB. FT./COUNT	.346
SCF AIR/MILE	97.0

LICENSE NO.	11M905
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	3M/
AXLE RATIO	.00/3.25
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	11/26/66
TIME	11.28
GVW, LB	5000
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	172
CL.MASK, SQ. IN.	6.0
PCV, CFM	2.1

AMBIENT CONDITIONS

TEMP.	40 F
PRESSURE	29.14 IN.
HUMIDITY	89 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.655
MILES/GALLON	10.3

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.04
DILUTION RATIO	2.655
EXH/AIR RATIO	.961
SCF EXH/MILE	93.3
MILES/GALLON	10.3

IDLE

DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.1
MAN. VAC.	20.0
RPM	560

ROUTE	ROAD-1
TRAFF.C	2
RPM/MPH	
HIGH GEAR	37.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1880 PPMC	4992 PPMC	.0167	4992 PPMC	.0167
HC FID					
TOTAL	3946 PPMC	10478 PPMC			
OLEFINS	1346 PPMC	3574 PPMC	.0351	10478 PPMC	.0351
AROMAT.	1000 PPMC	2655 PPMC	.0120	3574 PPMC	.0120
PARAFS.	1600 PPMC	4248 PPMC	.0082	2655 PPMC	.0082
			.0149	4248 PPMC	.0149
NOX	520 PPM	1381 PPM	.0154	1381 PPM	.0154
CO	1.33 PCT	3.53 PCT	.2395	3.53 PCT	.2395
CO2	4.87 PCT	12.93 PCT	1.3777	12.93 PCT	1.3777
O2	.87 PCT	2.31 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	159
2	168
3	144
4	149
5	166
6	167
7	161
8	160

DIL. RATIO FROM CO/CO2 CALCN. = 2.559 IS LOWER THAN 2.655 FROM NITROGEN COUNTS

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 30-8

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	10000	83.	.951
SAMP	5642	87.	.938
CARB	5658	87.	.938

ODOMETER	9723
TEST MILES	9.140
TEST MINUTES	25.09
CALC. MILES/HR	21.86
COUNT RATIO	.997
AVE. COUNTS/MIN	277.9
CUB. FT./COUNT	.347
SCF AIR/MILE	193.7

LICENSE NO.	14M132
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	6.71/9.14
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	11/25/66
TIME	3.51
GVW, LB	32000
LOAD, LB	9600
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	54 F
PRESSURE	29.10 IN.
HUMIDITY	72 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.796
MILES/GALLON	5.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.44
DILUTION RATIO	2.890
EXH/AIR RATIO	.953
SCF EXH/MILE	184.7
MILES/GALLON	5.6

IDLE

DWELL ANGLE	0
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	18.1
RPM	560

ROUTE	ROAD-4
TRAFFIC	2

RPM/MPH

HIGH GEAR	56.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1325 PPMC	3705 PPMC	.0246	3829 PPMC	.0254
HC FID					
TOTAL	2557 PPMC	7149 PPMC	.0475	7390 PPMC	.0491
OLEFINS	818 PPMC	2287 PPMC	.0152	2364 PPMC	.0157
AROMAT.	747 PPMC	2089 PPMC	.0138	2159 PPMC	.0134
PARAFS.	992 PPMC	2774 PPMC	.0193	2867 PPMC	.0200
NOx	540 PPM	1510 PPM	.0333	1561 PPM	.0344
CO	.83 PCT	2.32 PCT	.3115	2.40 PCT	.3220
CO2	4.53 PCT	12.67 PCT	2.6714	13.09 PCT	2.7613
O2	.31 PCT	.87 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	154
3	162
4	150
5	155
6	144
7	158
8	151

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 30-9

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	76.	.973
SAMP	5844	83.	.951
CARB	5844	87.	.938

ODOMETER	9745
TEST MILES	9.140
TEST MINUTES	26.84
CALC. MILES/HR	20.43
COUNT RATIO	1.000
AVE. COUNTS/MIN	277.9
CUR. FT./COUNT	.347
SCF AIR/MILE	200.2

LICENSE NO.	14M132
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	6.71/9.14
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	11/25/66
TIME	5.38
GVW, LB	32000
LOAD, LB	9600
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	52 F
PRESSURE	29.10 IN.
HUMIDITY	73 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.752
MILES/GALLON	5.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.46
DILUTION RATIO	2.890
EXH/AIR RATIO	.953
SCF EXH/MILE	190.8
MILES/GALLON	5.4

IDLE

DWELL ANGLE	0
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	18.1
RPM	560

ROUTE	ROAD-4
TRAFF.C	2
RPM/MPH	
HIGH GEAR	56.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1490 PPMC	4100 PPMC	.0281	4306 PPMC	.0295
HC FID					
TOTAL	2772 PPMC	7627 PPMC	.0523	8011 PPMC	.0549
OLEFINS	807 PPMC	2221 PPMC	.0152	2332 PPMC	.0160
AROMAT.	832 PPMC	2289 PPMC	.0147	2404 PPMC	.0154
PARAFS.	1133 PPMC	3118 PPMC	.0224	3274 PPMC	.0236
NOx	593 PPM	1632 PPM	.0372	1714 PPM	.0390
CO	.81 PCT	2.23 PCT	.3091	2.34 PCT	.3246
CO2	4.54 PCT	12.49 PCT	2.7217	13.12 PCT	2.8585
O2	.35 PCT	.96 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	154
3	162
4	150
5	155
6	144
7	158
8	151

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 31-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	NONE
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	6000	80.	.960
SAMP	4267	83.	.951
CAPR	4261	63.	1.017

ODOMETER	2098
TEST MILES	8.400
TEST MINUTES	26.19
CALC. MILES/HR	19.24
COUNT RATIO	1.001
AVE. COUNTS/MIN	277.5
CUR. FT./COUNT	.357
SCF AIR/MILE	177.7

LICENSE NO.	11M905
MODEL YEAR	1967
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	11/26/66
TIME	3.18
GVW, LB	20000
LOAD, LB	0
PER CENT LOAD	0
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	47 F
PRESSURE	29.12 IN.
HUMIDITY	71 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.420
MILES/GALLON	6.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.37
DILUTION RATIO	2.548
EXH/AIR RATIO	.955
SCF EXH/MILE	169.7
MILES/GALLON	5.9

IDLE

DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	18.9
RPM	550

ROUTE	ROAD-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2660 PPMC	6438 PPMC	.0393	6777 PPMC	.0413
HC FID					
TOTAL	4600 PPMC	11133 PPMC	.0679	11719 PPMC	.0715
OLEFINS	806 PPMC	1951 PPMC	.0119	2053 PPMC	.0125
AROMAT.	1542 PPMC	3732 PPMC	.0212	3929 PPMC	.0223
PARAFS.	2252 PPMC	5450 PPMC	.0349	5737 PPMC	.0367
NOX	733 PPM	1774 PPM	.0359	1867 PPM	.0378
CO	1.01 PCT	2.44 PCT	.3015	2.57 PCT	.3174
CO2	5.10 PCT	12.34 PCT	2.3919	12.99 PCT	2.5179
O2	.95 PCT	2.30 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

311 NO LOAD.

12-8

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR PUL 31-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	NONE
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	6000	77.	.970
SAMP	4015	79.	.964
CARB	4002	59.	1.031

ODOMETER	2120
TEST MILES	8.400
TEST MINUTES	25.25
CALC. MILES/HR	19.96
COUNT RATIO	1.003
AVE. COUNTS/MIN	277.5
CUB. FT./COUNT	.357
SCF AIR/MILE	169.1

LICENSE NO.	11M905
MODEL YEAR	1967
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	11/26/66
TIME	5.09
GVW, LB	20000
LOAD, LB	0
PER CENT LOAD	0
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	47 F
PRESSURE	29.12 IN.
HUMIDITY	78 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.504
MILES/GALLON	6.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.42
DILUTION RATIO	2.666
EXH/AIR RATIO	.954
SCF EXH/MILE	161.3
MILES/GALLON	6.2

IDLE

DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	18.9
RPM	550

ROUTE	ROAD-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2760 PPMC	6912 PPMC	.0401	7359 PPMC	.0427
HC FID					
TOTAL	4800 PPMC	12021 PPMC	.0697	12798 PPMC	.0742
OLEFINS	900 PPMC	2254 PPMC	.0131	2400 PPMC	.0139
AROMAT.	1487 PPMC	3724 PPMC	.0199	3965 PPMC	.0212
PARAFS.	2413 PPMC	6043 PPMC	.0368	6433 PPMC	.0391
NOX	687 PPM	1721 PPM	.0331	1832 PPM	.0353
CO	.92 PCT	2.30 PCT	.2701	2.45 PCT	.2876
CO2	4.90 PCT	12.27 PCT	2.2606	13.06 PCT	2.4065
O2	.95 PCT	2.38 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

312 NO LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 32-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	FULL
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	6000	68.	1.000
SAMP	5402	66.	1.007
CARB	5411	43.	1.091

ODOMETER	2144
TEST MILES	8.400
TEST MINUTES	26.21
CALC. MILES/HR	19.23
COUNT RATIO	.998
AVE. COUNTS/MIN	277.5
CUB. FT./COUNT	.357
SCF AIR/MILE	239.9

LICENSE NO.	11M905
MODEL YEAR	1967
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	11/28/66
TIME	10.01
GVW. LB	20000
LOAD. LB	10000
PER CENT LOAD	100
MAXIMUM BHP	164
CL.MASK. SQ. IN.	.0
PCV. CFM	2.2

AMBIENT CONDITIONS

TEMP.	33 F
PRESSURE	28.75 IN.
HUMIDITY	64 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.103
MILES/GALLON	4.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.39
DILUTION RATIO	2.115
EXH/AIR RATIO	.954
SCF EXH/MILE	228.9
MILES/GALLON	4.4

IDLE

DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	18.3
RPM	550

ROUTE	ROAD-3
TRAFFIC	1

RPM/MPH

HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2890 PPMC	6078 PPMC	.0500	6112 PPMC	.0503
HC FID					
TOTAL	4733 PPMC	9954 PPMC	.0819	10010 PPMC	.0824
OLEFINS	800 PPMC	1683 PPMC	.0138	1692 PPMC	.0139
AROMAT.	1533 PPMC	3224 PPMC	.0245	3242 PPMC	.0247
PARAFS.	2400 PPMC	5048 PPMC	.0436	5076 PPMC	.0438
NOX	920 PPM	1935 PPM	.0529	1946 PPM	.0532
CO	1.19 PCT	2.50 PCT	.4165	2.52 PCT	.4189
CO2	6.16 PCT	12.96 PCT	3.3875	13.03 PCT	3.4065
O2	1.05 PCT	2.21 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

321 FULL LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 32-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	FULL
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. COPR.
NITR	6000	59.	1.031
SAMP	5290	68.	1.000
CAPR	5292	40.	1.103

ODOMETER	2166
TEST MILES	8.400
TEST MINUTES	25.21
CALC. MILES/HR	19.99
COUNT RATIO	1.000
AVE. COUNTS/MIN	277.5
CUB. FT./COUNT	.357
SCF AIR/MILE	237.2

LICENSE NO.	11M905
MODEL YEAR	1967
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	11/28/66
TIME	1.00
GVW, LB	20000
LOAD, LB	10000
PER CENT LOAD	100
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	32 F
PRESSURE	28.75 IN.
HUMIDITY	68 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.170
MILES/GALLON	4.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.35
DILUTION RATIO	2.275
EXH/AIR RATIO	.955
SCF EXH/MILE	226.5
MILES/GALLON	4.4

IDLE

DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	18.4
RPM	550

ROUTE	ROAD-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2900 PPMC	6293 PPMC	.0512	6597 PPMC	.0537
HC FID					
TOTAL	4852 PPMC	10528 PPMC	.0857	11037 PPMC	.0899
OLEFINS	807 PPMC	1751 PPMC	.0142	1836 PPMC	.0149
AROMAT.	1552 PPMC	3368 PPMC	.0253	3530 PPMC	.0265
PARAFS.	2493 PPMC	5409 PPMC	.0462	5671 PPMC	.0484
NOX	906 PPM	1966 PPM	.0532	2061 PPM	.0557
CO	1.15 PCT	2.50 PCT	.4109	2.62 PCT	.4307
CO2	5.70 PCT	12.37 PCT	3.1995	12.97 PCT	3.3541
O2	1.02 PCT	2.21 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

322 FULL LOAD.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 33-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	55.	1.046
SAMP	4633	62.	1.021
CARB	4648	39.	1.107

ODOMETER	2188
TEST MILES	8.400
TEST MINUTES	25.40
CALC. MILES/HR	19.84
COUNT RATIO	.997
AVE. COUNTS/MIN	277.5
CUB. FT./COUNT	.347
SCF AIR/MILE	203.3

LICENSE NO.	11M905
MODEL YEAR	1967
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	11/28/66
TIME	3.06
GVW. LB	20000
LOAD. LB	5000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK. SQ. IN.	.0
PCV. CFM	2.2

AMBIENT CONDITIONS

TEMP.	31 F
PRESSURE	28.75 IN.
HUMIDITY	75 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.769
MILES/GALLON	5.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.55
DILUTION RATIO	2.889
EXH/AIR RATIO	.951
SCF EXH/MILE	193.4
MILES/GALLON	5.3

IDLE

DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	19.3
RPM	560

ROUTE	ROAD-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2410 PPMC	6674 PPMC	.0464	6962 PPMC	.0484
HC FID					
TOTAL	3950 PPMC	10938 PPMC	.0761	11411 PPMC	.0794
OLEFINS	823 PPMC	2279 PPMC	.0158	2378 PPMC	.0165
AROMAT.	1159 PPMC	3210 PPMC	.0205	3348 PPMC	.0214
PARAFS.	1968 PPMC	5450 PPMC	.0398	5685 PPMC	.0415
NOX	746 PPM	2066 PPM	.0477	2155 PPM	.0498
CO	.74 PCT	2.05 PCT	.2881	2.14 PCT	.3005
CO2	4.57 PCT	12.66 PCT	2.7953	13.20 PCT	2.9161
O2	.87 PCT	2.41 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

52-D

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 33-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	9015	57.	1.039
SAMP	4409	65.	1.010
CARB	4428	39.	1.107

ODOMETER	2210
TEST MILES	8.400
TEST MINUTES	27.59
CALC. MILES/HR	18.27
COUNT RATIO	.996
AVE. COUNTS/MIN	277.5
CUR. FT./COUNT	.347
SCF AIR/MILE	193.7

LICENSE NO.	114905
MODEL YEAR	1967
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	11/28/66
TIME	4.55
GVW. LB	20000
LOAD. LB	5000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK. SQ. IN.	.0
PCV. CFM	2.2

AMBIENT CONDITIONS

TEMP.	31 F
PRESSURE	28.75 IN.
HUMIDITY	75 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.102
MILES/GALLON	5.9

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.40
DILUTION RATIO	3.319
EXH/AIR RATIO	.954
SCF EXH/MILE	184.8
MILES/GALLON	5.4

IDLE	
DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	19.3
RPM	560

ROUTE	ROAD-3
TRAFFIC	3
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2270 PPMC	7042 PPMC	.0468	7534 PPMC	.0501
HC FID					
TOTAL	3815 PPMC	11834 PPMC	.0786	12662 PPMC	.0841
OLEFINS	847 PPMC	2627 PPMC	.0174	2811 PPMC	.0187
AROMAT.	1080 PPMC	3350 PPMC	.0204	3585 PPMC	.0218
PARAFS.	1888 PPMC	5857 PPMC	.0408	6266 PPMC	.0437
NOX	587 PPM	1821 PPM	.0402	1948 PPM	.0430
CO	.75 PCT	2.33 PCT	.3125	2.49 PCT	.3344
CO2	3.93 PCT	12.19 PCT	2.5726	13.04 PCT	2.7527
O2	.80 PCT	2.48 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 34-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8007	65.	1.010
SAMP	3895	69.	.997
CARB	3890	41.	1.099

ODOMETER	32266
TEST MILES	8.400
TEST MINUTES	25.40
CALC. MILES/HR	19.84
COUNT RATIO	1.001
AVE. COUNTS/MIN	277.5
CUR. FT./COUNT	.347
SCF AIR/MILE	168.2

LICENSE NO.	4681CD
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F9
DIST. NO.	F9
AIR CL. NO.	F4

DATE	11/29/66
TIME	2.55
GVW. LB	20000
LOAD. LB	4625
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK. SQ. IN.	.0
PCV. CFM	1.8

AMBIENT CONDITIONS

TEMP.	34 F
PRESSURE	28.67 IN.
HUMIDITY	85 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.084
MILES/GALLON	6.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.33
DILUTION RATIO	3.333
EXH/AIR RATIO	.955
SCF EXH/MILE	160.7
MILES/GALLON	5.9

ROUTE	ROAD-3
TRAFFIC	2

IDLE

DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	13.1
MAN. VAC.	20.0
RPM	500

RPM/MPH

HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	4420 PPMC	13631 PPMC	.0788	14733 PPMC	.0852
HC FID					
TOTAL	6801 PPMC	20974 PPMC	.1212	22670 PPMC	.1310
OLEFINS	1516 PPMC	4675 PPMC	.0270	5053 PPMC	.0292
AROMAT.	1895 PPMC	5844 PPMC	.0308	6317 PPMC	.0333
PARAFS.	3390 PPMC	10455 PPMC	.0634	11300 PPMC	.0685
NOX	493 PPM	1520 PPM	.0292	1643 PPM	.0315
CO	.80 PCT	2.47 PCT	.2883	2.67 PCT	.3116
CO2	3.88 PCT	11.97 PCT	2.1968	12.93 PCT	2.3744
O2	.90 PCT	2.78 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	130
2	137
3	131
4	135
5	140
6	137
7	136
8	123

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 34-3

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	59.	1.031
SAMP	4002	66.	1.007
CARB	3996	48.	1.072

ODOMETER	32289
TEST MILES	8.400
TEST MINUTES	26.40
CALC. MILES/HR	19.09
COUNT RATIO	1.002
AVE. COUNTS/MIN	277.5
CUB. FT./COUNT	.347
SCF AIR/MILE	168.6

LICENSE NO.	4681CD
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F9
DIST. NO.	F9
AIR CL. NO.	F4

DATE	11/29/66
TIME	4.50
GVW. LB	20000
LOAD. LB	4625
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK. SQ. IN.	.0
PCV. CFM	1.8

AMBIENT CONDITIONS

TEMP.	34 F
PRESSURE	28.67 IN.
HUMIDITY	85 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.048
MILES/GALLON	6.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.34
DILUTION RATIO	3.303
EXH/AIR RATIO	.955
SCF EXH/MILE	161.0
MILES/GALLON	5.8

IDLE

DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	13.1
MAN. VAC.	19.0
RPM	680

ROUTE	ROAD-3
TRAFFI	3

RPM/MPH

HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	4350 PPMC	13258 PPMC	.0768	14369 PPMC	.0832
HC FID					
TOTAL	7010 PPMC	21365 PPMC	.1237	23156 PPMC	.1341
OLEFINS	1480 PPMC	4511 PPMC	.0261	4889 PPMC	.0283
AROMAT.	1917 PPMC	5843 PPMC	.0307	6332 PPMC	.0333
PARAFS.	3613 PPMC	11012 PPMC	.0669	11935 PPMC	.0725
NOX	507 PPM	1545 PPM	.0297	1675 PPM	.0322
CO	.80 PCT	2.44 PCT	.2854	2.64 PCT	.3093
CO2	3.92 PCT	11.95 PCT	2.1971	12.95 PCT	2.3813
O2	.92 PCT	2.80 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	130
2	137
3	131
4	135
5	140
6	137
7	136
8	123

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 35-3

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	67.	1.003
SAMP	2896	80.	.960
CARB	2891	52.	1.057

ODOMETER	4253
TEST MILES	8.400
TEST MINUTES	26.59
CALC. MILES/HR	18.95
COUNT RATIO	1.002
AVE. COUNTS/MIN	277.5
CUB. FT./COUNT	.347
SCF AIR/MILE	122.4

LICENSE NO.	14M40
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	11/30/66
TIME	3.37
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.4

AMBIENT CONDITIONS

TEMP.	37 F
PRESSURE	29.14 IN.
HUMIDITY	59 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.526
MILES/GALLON	8.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.00
DILUTION RATIO	3.526
EXH/AIR RATIO	.962
SCF EXH/MILE	117.7
MILES/GALLON	8.3

IDLE

DWELL ANGLE	30
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	18.8
RPM	525

ROUTE	ROAD-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1620 PPMC	5711 PPMC	.0242	5711 PPMC	.0242
HC FID					
TOTAL	3274 PPMC	11543 PPMC	.0489	11543 PPMC	.0489
OLEFINS	906 PPMC	3194 PPMC	.0135	3194 PPMC	.0135
AROMAT.	1136 PPMC	4005 PPMC	.0161	4005 PPMC	.0161
PARAFS.	1232 PPMC	4343 PPMC	.0193	4343 PPMC	.0193
NOX	453 PPM	1597 PPM	.0225	1597 PPM	.0225
CO	1.00 PCT	3.53 PCT	.3018	3.53 PCT	.3018
CO2	3.55 PCT	12.52 PCT	1.6833	12.52 PCT	1.6833
O2	.38 PCT	1.34 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	162
3	161
4	161
5	162
6	157
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.494 IS LOWER THAN 3.526 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 35-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	64.	1.014
SAMP	2863	80.	.960
CARB	2877	49.	1.068

ODOMETER	4231
TEST MILES	8.400
TEST MINUTES	25.39
CALC. MILES/HR	19.85
COUNT RATIO	.995
AVE. COUNTS/MIN	277.5
CUB. FT./COUNT	.347
SCF AIR/MILE	123.0

LICENSE NO.	14M40
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	11/30/66
TIME	1.16
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.4

AMBIENT CONDITIONS

TEMP.	37 F
PRESSURE	29.14 IN.
HUMIDITY	64 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.581
MILES/GALLON	8.4

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.20
DILUTION RATIO	3.581
EXH/AIR RATIO	.958
SCF EXH/MILE	117.9
MILES/GALLON	8.4

IDLE	
DWELL ANGLE	30
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	18.8
RPM	525

ROUTE	ROAD-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1475 PPMC	5282 PPMC	.0224	5282 PPMC	.0224
HC FID					
TOTAL	2950 PPMC	10564 PPMC	.0448	10564 PPMC	.0448
OLEFINS	691 PPMC	2474 PPMC	.0105	2474 PPMC	.0105
AROMAT.	1110 PPMC	3975 PPMC	.0160	3975 PPMC	.0160
PARAFS.	1149 PPMC	4115 PPMC	.0183	4115 PPMC	.0183
NOX	546 PPM	1955 PPM	.0275	1955 PPM	.0275
CO	.85 PCT	3.04 PCT	.2609	3.04 PCT	.2609
CO2	3.59 PCT	12.86 PCT	1.7310	12.86 PCT	1.7310
O2	.52 PCT	1.86 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	162
3	161
4	161
5	162
6	157
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.541 IS LOWER THAN 3.581 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 36-1

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	10000	54.	1.050
SAMP	3428	60.	1.028
CARB	3433	41.	1.099

ODOMETER	1853
TEST MILES	9.140
TEST MINUTES	23.39
CALC. MILES/HR	23.45
COUNT RATIO	.999
AVE. COUNTS/MIN	277.4
CUB. FT./COUNT	.347
SCF AIR/MILE	139.7

LICENSE NO.	10M750
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	D3
DIST. NO.	D2
AIR CL. NO.	D2

DATE	12/ 1/66
TIME	3.04
GVW, LB	24000
LOAD, LB	7775
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK, SQ. IN.	8.0
PCV, CFM	2.1

AMBIENT CONDITIONS

TEMP.	21 F
PRESSURE	29.23 IN.
HUMIDITY	57 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.979
MILES/GALLON	7.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.07
DILUTION RATIO	4.010
EXH/AIR RATIO	.961
SCF EXH/MILE	134.2
MILES/GALLON	7.5

IDLE

DWELL ANGLE	29
IGN. TIMING	-10.0
A/F RATIO	12.7
MAN. VAC.	15.5
RPM	500

ROUTE	ROAD-4
TRAFFIC	2

RPM/MPH

HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1324 PPMC	5268 PPMC	.0254	5309 PPMC	.0256
HC FID					
TOTAL	2362 PPMC	9398 PPMC	.0453	9471 PPMC	.0457
OLEFINS	412 PPMC	1639 PPMC	.0079	1652 PPMC	.0080
AROMAT.	658 PPMC	2618 PPMC	.0114	2638 PPMC	.0115
PARAFS.	1292 PPMC	5141 PPMC	.0260	5180 PPMC	.0262
NOX	293 PPM	1166 PPM	.0187	1175 PPM	.0188
CO	.83 PCT	3.30 PCT	.3222	3.33 PCT	.3247
CO2	3.12 PCT	12.41 PCT	1.9027	12.51 PCT	1.9174
O2	.53 PCT	2.11 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	116
2	116
3	116
4	116
5	116
6	116
7	116
8	122

361

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 36-3

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	54.	1.050
SAMP	3640	57.	1.039
CARB	3637	37.	1.115

ODOMETER	1874
TEST MILES	9.140
TEST MINUTES	26.20
CALC. MILES/HR	20.93
COUNT RATIO	1.001
AVE. COUNTS/MIN	277.4
CUB. FT./COUNT	.347
SCF AIR/MILE	150.2

LICENSE NO.	10M750
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	D3
DIST. NO.	D2
AIR CL. NO.	D2

DATE	12/ 1/66
TIME	4.37
GVW. LB	24000
LOAD. LB	7775
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK. SQ. IN.	8.0
PCV. CFM	2.1

AMBIENT CONDITIONS

TEMP.	19 F
PRESSURE	29.23 IN.
HUMIDITY	57 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.776
MILES/GALLON	6.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.02
DILUTION RATIO	3.781
EXH/AIR RATIO	.962
SCF EXH/MILE	144.4
MILES/GALLON	6.9

IDLE

DWELL ANGLE	29
IGN. TIMING	-10.0
A/F RATIO	12.7
MAN. VAC.	15.5
RPM	500

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1590 PPMC	6004 PPMC	.0312	6011 PPMC	.0312
HC FID					
TOTAL	2762 PPMC	10430 PPMC	.0542	10442 PPMC	.0542
OLEFINS	478 PPMC	1805 PPMC	.0094	1807 PPMC	.0094
AROMAT.	760 PPMC	2870 PPMC	.0134	2873 PPMC	.0135
PARAFS.	1524 PPMC	5755 PPMC	.0313	5762 PPMC	.0314
NOX	306 PPM	1156 PPM	.0199	1157 PPM	.0199
CO	.91 PCT	3.44 PCT	.3607	3.44 PCT	.3612
CO2	3.29 PCT	12.42 PCT	2.0491	12.44 PCT	2.0515
O2	.53 PCT	2.00 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	116
2	116
3	116
4	116
5	116
6	116
7	116
8	122

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 37-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	9340	50.	1.031
SAMP	3498	61.	1.024
CARR	3484	37.	1.115

ODOMETER	35824
TEST MILES	8.400
TEST MINUTES	25.75
CALC. MILES/HR	19.57
COUNT RATIO	1.004
AVE. COUNTS/MIN	277.4
CUR. FT./COUNT	.347
SCF AIR/MILE	157.1

LICENSE NO.	4460CD
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	4M/
AXLE RATIO	6.50/8.85
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	12/ 2/66
TIME	1.10
GVW. LB	19500
LOAD. LB	4000
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK. SQ. IN.	.0
PCV. CFM	.0

AMBIENT CONDITIONS

TEMP.	19 F
PRESSURE	29.36 IN.
HUMIDITY	77 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.689
MILES/GALLON	7.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.65
DILUTION RATIO	3.742
EXH/AIR RATIO	.949
SCF EXH/MILE	149.1
MILES/GALLON	7.1

IDLE

DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	13.1
MAN. VAC.	16.8
RPM	500

ROUTE	ROAD-3
TRAFFIC	1

RPM/MPH

HIGH GEAR	51.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1050 PPMC	3873 PPMC	.0208	3929 PPMC	.0211
HC FID					
TOTAL	2059 PPMC	7595 PPMC	.0407	7704 PPMC	.0413
OLEFINS	432 PPMC	1593 PPMC	.0085	1616 PPMC	.0087
AROMAT.	674 PPMC	2486 PPMC	.0124	2522 PPMC	.0126
PARAFS.	953 PPMC	3515 PPMC	.0198	3566 PPMC	.0201
NOX	686 PPM	2530 PPM	.0450	2567 PPM	.0457
CO	.51 PCT	1.88 PCT	.2039	1.91 PCT	.2069
CO2	3.55 PCT	13.09 PCT	2.2301	13.28 PCT	2.2622
O2	.73 PCT	2.69 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	167
2	162
3	160
4	165
5	158
6	163
7	0
8	0

B-4th

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 37-4

ROAD OPN. LOS ANGELES
WT. CLASS 3
LOAD HALF
TRUCK MAKE GMC
FLOW ELEM. 6
TRUCK NUMBER 1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	70.	.964
SAMP	3416	67.	1.003
CARB	3419	30.	1.144

ODOMETER	35867
TEST MILES	8.400
TEST MINUTES	25.02
CALC. MILES/HR	20.14
COUNT RATIO	.999
AVE. COUNTS/MIN	277.4
CUB. FT./COUNT	.347
SCF AIR/MILE	160.8

LICENSE NO.	4460CD
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	4M/
AXLE RATIO	6.50/8.85
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	12/ 3/66
TIME	9.30
GVW. LB	19500
LOAD. LB	4000
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK. SQ. IN.	.0
PCV. CFM	.0

AMBIENT CONDITIONS

TEMP. 15 F
PRESSURE 29.83 IN.
HUMIDITY 74 PCT

FROM NITROGEN COUNTS

DILUTION RATIO 3.249

MILES/GALLON 7.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.69
DILUTION RATIO	3.378
EXH/AIR RATIO	.948
SCF EXH/MILE	152.5
MILES/GALLON	6.9

IDLE

DWELL ANGLE	32
IGN. TIMING	-3.0
A/F RATIO	13.1
MAN. VAC.	17.8
RPM	500

ROUTE	ROAD-3
TRAFFIC	1
RPM / MPH	
HIGH GEAR	51.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1295 PPMC	4207 PPMC	.0231	4375 PPMC	.0240
HC FID					
TOTAL	2391 PPMC	7768 PPMC	.0426	8077 PPMC	.0443
OLEFINS	618 PPMC	2008 PPMC	.0110	2088 PPMC	.0114
AROMAT.	658 PPMC	2138 PPMC	.0108	2223 PPMC	.0112
PARAFS.	1115 PPMC	3623 PPMC	.0208	3767 PPMC	.0217
NOX	746 PPM	2424 PPM	.0441	2520 PPM	.0459
CO	.54 PCT	1.75 PCT	.1945	1.82 PCT	.2022
CO2	3.94 PCT	12.80 PCT	2.2292	13.31 PCT	2.3179
O2	.88 PCT	2.86 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	167
2	162
3	160
4	165
5	158
6	163
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 38-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	4000	73.	.983
SAMP	2030	85.	.945
CARB	2016	43.	1.091

ODOMETER	5821
TEST MILES	8.400
TEST MINUTES	29.21
CALC. MILES/HR	17.25
COUNT RATIO	1.007
AVE. COUNTS/MIN	278.6
CUB. FT./COUNT	.346
SCF AIR/MILE	90.0

LICENSE NO.	1449DU
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	318
TRANSMISSION	4M/
AXLE RATIO	.00/4.10
CARB. NO.	D2
DIST. NO.	D2
AIR CL. NO.	D2

DATE	12/ 2/66
TIME	12.50
GVW, LB	7500
LOAD, LB	1550
PER CENT LOAD	50
MAXIMUM BHP	200
CL.MASK, SQ. IN.	8.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	23 F
PRESSURE	29.83 IN.
HUMIDITY	65 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.051
MILES/GALLON	11.1

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.93
DILUTION RATIO	3.051
EXH/AIR RATIO	.964
SCF EXH/MILE	86.8
MILES/GALLON	11.1

IDLE	
DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.6
MAN. VAC.	18.5
RPM	560

ROUTE	ROAD-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	49.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2510 PPMC	7658 PPMC	.0239	7658 PPMC	.0239
HC FID					
TOTAL	4090 PPMC	12479 PPMC	.0389	12479 PPMC	.0389
OLEFINS	620 PPMC	1892 PPMC	.0059	1892 PPMC	.0059
AROMAT.	1117 PPMC	3408 PPMC	.0095	3408 PPMC	.0095
PARAFS.	2353 PPMC	7179 PPMC	.0235	7179 PPMC	.0235
NOX	453 PPM	1382 PPM	.0143	1382 PPM	.0143
CO	1.23 PCT	3.75 PCT	.2367	3.75 PCT	.2367
CO2	4.10 PCT	12.51 PCT	1.2396	12.51 PCT	1.2396
O2	.84 PCT	2.56 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	152
3	143
4	149
5	143
6	146
7	147
8	151

DIL. RATIO FROM CO/CO2 CALCN. = 2.996 IS LOWER THAN 3.051 FROM NITROGEN COUNTS

B-45

B-71

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 38-2

ROAD OPN. LOS ANGELES
WT. CLASS 2
LOAD HALF
TRUCK MAKE DODGE
FLOW ELEM. 9
TRUCK NUMBER 1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4025	63.	1.017
SAMP	2021	78.	.967
CARB	2014	43.	1.091

ODOMETER	5845
TEST MILES	8.400
TEST MINUTES	27.10
CALC. MILES/HR	18.60
COUNT RATIO	1.003
AVE. COUNTS/MIN	278.6
CUB. FT./COUNT	.346
SCF AIR/MILE	90.0

LICENSE NO.	1449DU
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	318
TRANSMISSION	4M/
AXLE RATIO	.00/4.10
CARB. NO.	D2
DIST. NO.	D2
AIR CL. NO.	D2

DATE	12/ 2/66
TIME	2.20
GVW, LB	7500
LOAD, LB	1550
PER CENT LOAD	50
MAXIMUM BHP	200
CL.MASK, SQ. IN.	8.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP. 23 F
PRESSURE 29.87 IN.
HUMIDITY 67 PCT

FROM NITROGEN COUNTS

DILUTION RATIO 3.096

MILES/GALLON 11.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.01
DILUTION RATIO	3.110
EXH/AIR RATIO	.962
SCF EXH/MILE	86.6
MILES/GALLON	11.4

IDLE

DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.6
MAN. VAC.	18.5
RPM	560

ROUT	ROAD-2
TRAFF C	2
RPM/MPH	
HIGH GEAR	49.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2010 PPMC	6222 PPMC	.0194	6252 PPMC	.0195
HC FID					
TOTAL	3591 PPMC	11116 PPMC	.0346	11169 PPMC	.0348
OLEFINS	592 PPMC	1833 PPMC	.0057	1841 PPMC	.0057
AROMAT.	830 PPMC	2569 PPMC	.0070	2582 PPMC	.0070
PARAFS.	2169 PPMC	6714 PPMC	.0219	6746 PPMC	.0220
NOX	433 PPM	1340 PPM	.0139	1347 PPM	.0139
CO	1.12 PCT	3.47 PCT	.2183	3.48 PCT	.2194
CO2	3.99 PCT	12.35 PCT	1.2221	12.41 PCT	1.2279
O2	.66 PCT	2.04 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	152
3	143
4	149
5	143
6	146
7	147
8	151

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 39-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	70.	.993
SAMP	2453	82.	.954
CAR9	2458	49.	1.068

ODOMETER	1252
TEST MILES	8.400
TEST MINUTES	28.79
CALC. MILES/HR	17.51
COUNT RATIO	.998
AVE. COUNTS/MIN	278.6
CUB. FT./COUNT	.346
SCF AIR/MILE	105.2

LICENSE NO.	11M931
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	300
TRANSMISSION	3M/
AXLE RATIO	.00/4.56
CARB. NO.	F5
DIST. NO.	F5
AIR CL. NO.	F1

DATE	12/ 5/66
TIME	11.32
GVW, LB	7500
LOAD, LB	1775
PER CENT LOAD	50
MAXIMUM BHP	150
CL.MASK, SQ. IN.	.0
PCV, CFM	2.3

AMBIENT CONDITIONS

TEMP.	37 F
PRESSURE	29.34 IN.
HUMIDITY	96 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.698
MILES/GALLON	10.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.31
DILUTION RATIO	2.721
FXH/AIR RATIO	.956
SCF EXH/MILE	100.5
MILES/GALLON	10.1

IDLE

DWELL ANGLE	37
IGN. TIMING	-6.0
A/F RATIO	12.3
MAN. VAC.	17.3
RPM	500

ROUTE	ROAD-2
TRAFFIC	1

RPM/MPH

HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2010 PPMC	5422 PPMC	.0196	5470 PPMC	.0198
HC FID					
TOTAL	3688 PPMC	9949 PPMC	.0360	10036 PPMC	.0363
OLEFINS	607 PPMC	1638 PPMC	.0059	1652 PPMC	.0060
AROMAT.	832 PPMC	2244 PPMC	.0070	2264 PPMC	.0071
PARAFS.	2249 PPMC	6067 PPMC	.0230	6120 PPMC	.0232
NOX	527 PPM	1422 PPM	.0171	1434 PPM	.0172
CO	1.00 PCT	2.70 PCT	.1972	2.72 PCT	.1989
CO2	4.74 PCT	12.79 PCT	1.4684	12.90 PCT	1.4812
O2	.65 PCT	1.75 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	169
2	166
3	182
4	166
5	167
6	162
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 39-3

ROAD OPN. LOS ANGELES
WT. CLASS 2
LOAD HALF
TRUCK MAKE FORD
FLOW ELEM. 9
TRUCK NUMBER 2

ROAD ROUTE

		GAS TEMP.	
	CO'N	DEG.	CORR.
NITR	4001	69.	.997
SAMP	2424	86.	.941
CARB	2411	45.	1.083

ODOMETER	1276
TEST MILES	8.400
TEST MINUTES	28.60
CALC. MILES/HR	17.62
COUNT RATIO	1.005
AVE. COUNTS/MIN	278.6
CUB. FT./COUNT	.346
SCF AIR/MILE	104.7

LICENSE NO.	11M931
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	300
TRANSMISSION	3M/
AXLE RATIO	.00/4.56
CARB. NO.	F5
DIST. NO.	F5
AIR CL. NO.	F1

DATE	12/ 5/66
TIME	1.32
GVW. LB	7500
LOAD, LB	1775
PER CENT LOAD	50
MAXIMUM BHP	150
CL.MASK, SQ. IN.	.0
PCV, CFM	2.3

AMBIENT CONDITIONS

TEMP. 37 F
PRESSURE 29.34 IN.
HUMIDITY 96 PCT

FROM NITROGEN COUNTS

DILUTION RATIO 2.747

MILES/GALLON 10.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.21
DILUTION RATIO	2.751
EXH/AIR RATIO	.958
SCF EXH/MILE	100.2
MILES/GALLON	10.0

IDLE	
DWELL ANGLE	37
IGN. TIMING	-6.0
A/F RATIO	12.3
MAN. VAC.	17.3
RPM	500

ROUTE	ROAD-2
TRAFF C	1
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2220 PPMC	6099 PPMC	.0220	6108 PPMC	.0220
HC FID					
TOTAL	3852 PPMC	10583 PPMC	.0381	10598 PPMC	.0382
OLEFINS	614 PPMC	1687 PPMC	.0061	1689 PPMC	.0061
APOMAT.	849 PPMC	2332 PPMC	.0073	2336 PPMC	.0073
PARAFS.	2389 PPMC	6563 PPMC	.0248	6573 PPMC	.0249
NOx	499 PPM	1371 PPM	.0164	1373 PPM	.0164
CO	1.08 PCT	2.97 PCT	.2162	2.97 PCT	.2165
CO2	4.63 PCT	12.72 PCT	1.4563	12.74 PCT	1.4584
O2	.60 PCT	1.65 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	169
2	166
3	182
4	166
5	167
6	162
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 40-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	4000	60.	1.028
SAMP	2380	64.	1.014
CARB	2361	70.	.993

ODOMETER	19338
TEST MILES	8.400
TEST MINUTES	26.55
CALC. MILES/HR	18.98
COUNT RATIO	1.008
AVE. COUNTS/MIN	277.4
CUB. FT./COUNT	.347
SCF AIR/MILE	93.5

LICENSE NO.	A34508
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	.00/5.12
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	12/ 6/66
TIME	1.20
GVW, LB	10000
LOAD, LB	2075
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	40 F
PRESSURE	29.10 IN.
HUMIDITY	95 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.704
MILES/GALLON	10.9

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.56
DILUTION RATIO	2.805
EXH/AIR RATIO	.972
SCF EXH/MILE	90.9
MILES/GALLON	10.5

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	18.4
RPM	575

ROUTE	ROAD-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	58.10
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3142 PPMC	8496 PPMC	.0278	9813 PPMC	.0288
HC FID					
TOTAL	4800 PPMC	12979 PPMC	.0424	13463 PPMC	.0440
OLEFINS	800 PPMC	2163 PPMC	.0071	2244 PPMC	.0073
AROMAT.	1105 PPMC	2988 PPMC	.0085	3099 PPMC	.0088
PARAFS.	2895 PPMC	7828 PPMC	.0268	8120 PPMC	.0278
NOX	464 PPM	1255 PPM	.0136	1301 PPM	.0141
CO	1.64 PCT	4.43 PCT	.2930	4.60 PCT	.3039
CO2	4.17 PCT	11.28 PCT	1.1704	11.70 PCT	1.2140
O2	.72 PCT	1.95 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	178
3	175
4	182
5	178
6	165
7	0
8	0

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 40-3

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	59.	1.031
SAND	2517	62.	1.021
CARB	2509	74.	.980

ODOMETER	19361
TEST MILES	8.400
TEST MINUTES	28.70
CALC. MILES/HR	17.56
COUNT RATIO	1.003
AVE. COUNTS/MIN	277.4
CUB. FT./COUNT	.347
SCF AIR/MILE	97.4

LICENSE NO.	A345DB
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	.00/5.12
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	12/ 6/66
TIME	3.25
GVW, LB	10000
LOAD, LB	2075
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	45 F
PRESSURE	29.00 IN.
HUMIDITY	100 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.606
MILES/GALLON	10.3

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.59
DILUTION RATIO	2.671
EXH/AIR RATIO	.971
SCF EXH/MILE	94.6
MILES/GALLON	10.1

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	18.4
RPM	575

ROUTE	ROAD-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	58.10
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3125 PPMC	8143 PPMC	.0277	8346 PPMC	.0284
HC FID					
TOTAL	4975 PPMC	12964 PPMC	.0441	13287 PPMC	.0452
OLEFINS	645 PPMC	1681 PPMC	.0057	1723 PPMC	.0059
AROMAT.	1339 PPMC	3489 PPMC	.0106	3576 PPMC	.0108
PARAFS.	2991 PPMC	7794 PPMC	.0278	7988 PPMC	.0285
NOX	429 PPM	1118 PPM	.0126	1146 PPM	.0129
CO	1.69 PCT	4.40 PCT	.3030	4.51 PCT	.3106
CO2	4.40 PCT	11.47 PCT	1.2395	11.75 PCT	1.2704
O2	.68 PCT	1.77 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	178
3	175
4	182
5	178
6	165
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 41-1

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	73.	.983
SAMP	2018	105.	.885
CARB	2011	92.	.923

ODOMETER	14729
TEST MILES	8.400
TEST MINUTES	28.40
CALC. MILES/HR	17.75
COUNT RATIO	1.003
AVE. COUNTS/MIN	278.6
CUB. FT./COUNT	.346
SCF AIR/MILE	73.1

LICENSE NO.	GR3487
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	.00/3.07
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	12/ 7/66
TIME	11.05
GVW. LB	5200
LOAD. LB	450
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK. SQ. IN.	.0
PCV. CFM	1.0

AMBIENT CONDITIONS

TEMP.	54 F
PRESSURE	29.02 IN.
HUMIDITY	96 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.926
MILES/GALLON	13.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.98
DILUTION RATIO	2.926
EXH/AIR RATIO	.963
SCF EXH/MILE	70.3
MILES/GALLON	13.3

IDLE

DWELL ANGLE	0
IGN. TIMING	-7.5
A/F RATIO	12.3
MAN. VAC.	18.4
RPM	525

ROUTE	ROAD-1
TRAFFIC	1
RPM/MPH	
HIGH GEAR	39.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2130 PPMC	6233 PPMC	.0158	6233 PPMC	.0158
HC FID					
TOTAL	4000 PPMC	11705 PPMC	.0296	11705 PPMC	.0296
OLEFINS	532 PPMC	1557 PPMC	.0039	1557 PPMC	.0039
AROMAT.	1135 PPMC	3321 PPMC	.0076	3321 PPMC	.0076
PARAFS.	2333 PPMC	6827 PPMC	.0181	6827 PPMC	.0181
NOX	440 PPM	1288 PPM	.0108	1288 PPM	.0108
CO	1.28 PCT	3.75 PCT	.1915	3.75 PCT	.1915
CO2	4.45 PCT	13.02 PCT	1.0462	13.02 PCT	1.0462
O2	.65 PCT	1.90 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	165
2	152
3	153
4	146
5	170
6	143
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.778 IS LOWER THAN 2.926 FROM NITROGEN COUNTS

B-8
411

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 41-2

ROAD OPN.	LOS ANGELES
WT. CLASS	1
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	9
TRUCK NUMBER	1
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	76.	.973
SAVP	2092	95.	.914
CARB	2082	83.	.951

ODOMETER	14752
TEST MILES	8.400
TEST MINUTES	28.85
CALC. MILES/HR	17.47
COUNT RATIO	1.005
AVE. COUNTS/MIN	338.4
CUB. FT./COUNT	.285
SCF AIR/MILE	64.2

LICENSE NO.	GR3487
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	.00/3.07
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	12/ 7/66
TIME	1.35
GVW, LB	5200
LOAD, LB	450
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	1.0

AMBIENT CONDITIONS

TEMP.	53 F
PRESSURE	29.01 IN.
HUMIDITY	96 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.781
MILES/GALLON	15.2

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.01
DILUTION RATIO	2.781
EXH/AIR RATIO	.962
SCF EXH/MILE	61.7
MILES/GALLON	15.2

IDLE	
DWELL ANGLE	C
IGN. TIMING	-7.5
A/F RATIO	12.3
MAN. VAC.	18.4
RPM	525

ROUTE	ROAD-1
TRAFFIC	1
RPM/MPH	
HIGH GEAR	39.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2160 PPMC	6008 PPMC	.0133	6008 PPMC	.0133
HC FID					
TOTAL	4010 PPMC	11153 PPMC	.0248	11153 PPMC	.0248
OLEFINS	539 PPMC	1499 PPMC	.0033	1499 PPMC	.0033
AROMAT.	1180 PPMC	3282 PPMC	.0066	3282 PPMC	.0066
PARAFS.	2291 PPMC	6372 PPMC	.0148	6372 PPMC	.0148
NOX	400 PPM	1113 PPM	.0082	1113 PPM	.0082
CO	1.32 PCT	3.67 PCT	.1647	3.67 PCT	.1647
CO2	4.72 PCT	13.13 PCT	.9254	13.13 PCT	.9254
O2	.58 PCT	1.61 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	165
2	152
3	153
4	146
5	170
6	143
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.631 IS LOWER THAN 2.781 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 42-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	7000	78.	.967
SAMP	2935	78.	.967
CARB	2937	80.	.960

ODOMETER	15163
TEST MILES	8.400
TEST MINUTES	24.50
CALC. MILES/HR	20.57
COUNT RATIO	.999
AVE. COUNTS/MIN	278.5
CUB. FT./COUNT	.346
SCF AIR/MILE	110.1

LICENSE NO.	11M855
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	4M/
AXLE RATIO	.00/6.20
CARB. NO.	F7
DIST. NO.	F7
AIR CL. NO.	F1

DATE	12/ 8/66
TIME	11.16
GVW, LB	18000
LOAD, LB	5650
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	61 F
PRESSURE	28.87 IN.
HUMIDITY	90 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.385
MILES/GALLON	9.1

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.61
DILUTION RATIO	3.385
EXH/AIR RATIO	.971
SCF EXH/MILE	107.0
MILES/GALLON	9.1

IDLE	
DWELL ANGLE	36
IGN. TIMING	-6.0
A/F RATIO	13.2
MAN. VAC.	16.8
RPM	525

ROUTE	ROAD-3
TRAFFIC	1
RPM/MPH	
HIGH GEAR	58.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1150 PPMC	3893 PPMC	.0150	3893 PPMC	.0150
HC FID					
TOTAL	2413 PPMC	8168 PPMC	.0314	8168 PPMC	.0314
OLEFINS	379 PPMC	1283 PPMC	.0049	1283 PPMC	.0049
AROMAT.	909 PPMC	3077 PPMC	.0111	3077 PPMC	.0111
PARAFS.	1125 PPMC	3808 PPMC	.0154	3808 PPMC	.0154
NOX	313 PPM	1060 PPM	.0135	1060 PPM	.0135
CO	1.34 PCT	4.54 PCT	.3527	4.54 PCT	.3527
CO2	3.52 PCT	11.92 PCT	1.4556	11.92 PCT	1.4556
O2	.47 PCT	1.59 PCT			

COMPRESSION PRE[illegible] AT 200 RPM, PSIG

1	158
2	164
3	169
4	165
5	162
6	164
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.344 IS LOWER THAN 3.385 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 42-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	79.	.964
SAMP	3150	91.	.926
CARB	3154	77.	.970

ODOMETER	15185
TEST MILES	8.400
TEST MINUTES	24.68
CALC. MILES/HR	20.42
COUNT RATIO	.999
AVE. COUNTS/MIN	278.5
CUB. FT./COUNT	.346
SCF AIR/MILE	119.4

LICENSE NO.	11M855
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	4M/
AXLE RATIO	.00/6.20
CARB. NO.	F7
DIST. NO.	F7
AIR CL. NO.	F1

DATE	12/ 8/66
TIME	1.19
GVW, LB	18000
LOAD, LB	5650
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	65 F
PRESSURE	28.86 IN.
HUMIDITY	80 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.312
MILES/GALLON	8.1

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.49
DILUTION RATIO	3.312
EXH/AIR RATIO	.974
SCF EXH/MILE	116.3
MILES/GALLON	8.1

IDLE

DWELL ANGLE	36
IGN. TIMING	-6.0
A/F RATIO	13.2
MAN. VAC.	16.8
RPM	525

ROUTE	ROAD-3
TRAFFIC	1
RPM/MPH	
HIGH GEAR	58.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1220 PPMC	4041 PPMC	.0169	4041 PPMC	.0169
HC FID					
TOTAL	2550 PPMC	8578 PPMC	.0359	8578 PPMC	.0359
OLEFINS	507 PPMC	1679 PPMC	.0070	1679 PPMC	.0070
AROMAT.	856 PPMC	2835 PPMC	.0110	2835 PPMC	.0110
PARAFS.	1227 PPMC	4064 PPMC	.0178	4064 PPMC	.0178
NOX	307 PPM	1017 PPM	.0141	1017 PPM	.0141
CO	1.49 PCT	4.93 PCT	.4171	4.93 PCT	.4171
CO2	3.61 PCT	11.96 PCT	1.5878	11.96 PCT	1.5878
O2	.33 PCT	1.09 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	164
3	169
4	165
5	162
6	164
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.298 IS LOWER THAN 3.312 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 43-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	74.	.980
SAMP	2218	106.	.882
CARB	2211	73.	.983

ODOMETER	21779
TEST MILES	8.400
TEST MINUTES	27.00
CALC. MILES/HR	18.67
COUNT RATIO	1.003
AVE. COUNTS/MIN	278.6
CUB. FT./COUNT	.346
SCF AIR/MILE	86.7

LICENSE NO.	MA6142
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	266
TRANSMISSION	3M/
AXLE RATIO	.00/4.57
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	12/ 9/66
TIME	10.19
GVW, LB	6100
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	44 F
PRESSURE	29.25 IN.
HUMIDITY	82 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.003
MILES/GALLON	11.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.29
DILUTION RATIO	3.003
EXH/AIR RATIO	.956
SCF EXH/MILE	82.9
MILES/GALLON	11.6

IDLE	
DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	18.3
RPM	500

ROUTE	ROAD-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2870 PPMC	8617 PPMC	.0257	8617 PPMC	.0257
HC FID					
TOTAL	4478 PPMC	13446 PPMC	.0401	13446 PPMC	.0401
OLEFINS	584 PPMC	1754 PPMC	.0052	1754 PPMC	.0052
AROMAT.	1298 PPMC	3897 PPMC	.0105	3897 PPMC	.0105
PARAFS.	2596 PPMC	7795 PPMC	.0244	7795 PPMC	.0244
NOX	387 PPM	1162 PPM	.0115	1162 PPM	.0115
CO	.95 PCT	2.85 PCT	.1720	2.85 PCT	.1720
CO2	4.40 PCT	13.21 PCT	1.2516	13.21 PCT	1.2516
O2	.78 PCT	2.34 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	157
3	149
4	158
5	162
6	154
7	158
8	156

DIL. RATIO FROM CO/CO2 CALCN. = 2.923 IS LOWER THAN 3.003 FROM NITROGEN COUNTS

58-8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 43-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	91.	.926
SAMP	2307	108.	.877
CARB	2290	70.	.993

ODOMETER	21801
TEST MILES	8.400
TEST MINUTES	27.38
CALC. MILES/HR	18.41
COUNT RATIO	1.007
AVE. COUNTS/MIN	278.6
CUB. FT./COUNT	.346
SCF AIR/MILE	90.8

LICENSE NO.	MA6142
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	266
TRANSMISSION	3M/
AXLE RATIO	.00/4.57
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	12/ 9/66
TIME	11.53
GVW, LB	6100
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	44 F
PRESSURE	29.25 IN.
HUMIDITY	82 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.831
MILES/GALLON	11.6

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.30
DILUTION RATIO	2.889
EXH/AIR RATIO	.956
SCF EXH/MILE	86.8
MILES/GALLON	11.3

IDLE	
DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	18.3
RPM	500

ROUTE	ROAD-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED FXHAUST	EMISSION WT. LB/MILE
HC NDIR	3260 PPMC	9230 PPMC	.0288	9417 PPMC	.0294
HC FID					
TOTAL	5123 PPMC	14505 PPMC	.0453	14799 PPMC	.0462
OLEFINS	672 PPMC	1903 PPMC	.0059	1941 PPMC	.0061
AROMAT.	1338 PPMC	3788 PPMC	.0105	3865 PPMC	.0107
PARAFS.	3113 PPMC	8814 PPMC	.0288	8993 PPMC	.0294
NOX	347 PPM	982 PPM	.0102	1002 PPM	.0104
CO	.95 PCT	2.69 PCT	.1697	2.74 PCT	.1731
CO2	4.46 PCT	12.63 PCT	1.2514	12.88 PCT	1.2768
O2	.79 PCT	2.24 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	157
3	149
4	158
5	162
6	154
7	158
8	156

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 44-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	70.	.993
SAMP	3189	73.	.983
CARB	3200	34.	1.127

ODOMETER	26538
TEST MILES	8.400
TEST MINUTES	25.19
CALC. MILES/HR	20.01
COUNT RATIO	.997
AVE. COUNTS/MIN	281.8
CUR. FT./COUNT	.342
SCF AIR/MILE	143.9

LICENSE NO.	4309DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	12/10/66
TIME	9.33
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	31 F
PRESSURE	29.50 IN.
HUMIDITY	89 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.217
MILES/GALLON	7.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.98
DILUTION RATIO	3.351
EXH/AIR RATIO	.963
SCF EXH/MILE	138.6
MILES/GALLON	7.1

IDLE	
DWELL ANGLE	39
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	500

ROUTE	ROAD-3
TRAFFIC	1
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1940 PPMC	6242 PPMC	.0311	6502 PPMC	.0324
HC FID					
TOTAL	3131 PPMC	10074 PPMC	.0502	10493 PPMC	.0523
OLEFINS	306 PPMC	985 PPMC	.0049	1026 PPMC	.0051
AROMAT.	976 PPMC	3140 PPMC	.0142	3271 PPMC	.0148
PARAFS.	1849 PPMC	5949 PPMC	.0311	6197 PPMC	.0324
NOX	445 PPM	1432 PPM	.0237	1491 PPM	.0247
CO	1.06 PCT	3.41 PCT	.3435	3.55 PCT	.3578
CO2	3.69 PCT	11.87 PCT	1.8788	12.37 PCT	1.9570
O2	.65 PCT	2.09 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	157
3	155
4	159
5	155
6	159
7	0
8	0

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 44-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	53.	1.053
SAMP	3334	67.	1.003
CARB	3341	40.	1.103

ODOMETER	25560
TEST MILES	8.400
TEST MINUTES	25.61
CALC. MILES/HR	19.68
COUNT RATIO	.998
AVE. COUNTS/MIN	281.8
CUB. FT./COUNT	.342
SCF AIR/MILE	147.0

LICENSE NO.	4309DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	12/10/66
TIME	11.30
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	31 F
PRESSURE	29.50 IN.
HUMIDITY	92 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.204
MILES/GALLON	7.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.10
DILUTION RATIO	3.322
EXH/AIR RATIO	.960
SCF EXH/MILE	141.1
MILES/GALLON	7.1

IDLE

DWELL ANGLE	39
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	500

ROUTE	ROAD-3
TRAFFIC	2

RPM/MPH

HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1915 PPMC	6135 PPMC	.0311	6361 PPMC	.0323
HC FID					
TOTAL	3085 PPMC	9884 PPMC	.0502	10248 PPMC	.0520
OLEFINS	347 PPMC	1112 PPMC	.0056	1153 PPMC	.0058
AROMAT.	943 PPMC	3021 PPMC	.0139	3132 PPMC	.0144
PARAFS.	1795 PPMC	5751 PPMC	.0306	5963 PPMC	.0317
NOX	511 PPM	1637 PPM	.0276	1697 PPM	.0286
CO	.98 PCT	3.14 PCT	.3222	3.26 PCT	.3341
CO2	3.78 PCT	12.11 PCT	1.9525	12.56 PCT	2.0244
O2	.59 PCT	1.89 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	157
3	155
4	159
5	155
6	159
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 45-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	73.	.983
SAMP	2897	70.	.993
CARB	2902	43.	1.091

ODOMETER	35837
TEST MILES	8.400
TEST MINUTES	25.17
CALC. MILES/HR	20.02
COUNT RATIO	.998
AVE. COUNTS/MIN	281.8
CUB. FT./COUNT	.342
SCF AIR/MILE	127.5

LICENSE NO.	4310DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	12/12/66
TIME	4.12
GVW. LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	27 F
PRESSURE	29.72 IN.
HUMIDITY	69 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.392
MILES/GALLON	7.9

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.79
DILUTION RATIO	3.392
EXH/AIR RATIO	.967
SCF EXH/MILE	123.3
MILES/GALLON	7.9

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	18.5
RPM	525

ROUTE	ROAD-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1605 PPMC	5444 PPMC	.0241	5444 PPMC	.0241
HC FID					
TOTAL	2909 PPMC	9867 PPMC	.0437	9867 PPMC	.0437
OLEFINS	333 PPMC	1129 PPMC	.0050	1129 PPMC	.0050
AROMAT.	1072 PPMC	3636 PPMC	.0150	3636 PPMC	.0150
PARAFS.	1504 PPMC	5101 PPMC	.0237	5101 PPMC	.0237
NOX	413 PPM	1401 PPM	.0206	1401 PPM	.0206
CO	1.19 PCT	4.04 PCT	.3617	4.04 PCT	.3617
CO2	3.58 PCT	12.14 PCT	1.7098	12.14 PCT	1.7098
O2	.55 PCT	1.87 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	146
2	151
3	160
4	155
5	158
6	150
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.372 IS LOWER THAN 3.392 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 45-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	4
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	72.	.987
SAMP	2786	68.	1.000
CARB	2792	41.	1.099

ODOMETER	35859
TEST MILES	8.400
TEST MINUTES	25.38
CALC. MILES/HR	19.86
COUNT RATIO	.998
AVE. COUNTS/MIN	281.8
CUR. FT./COUNT	.342
SCF AIR/MILE	123.1

LICENSE NO.	4310DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	12/13/66
TIME	9.17
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.2

AMBIENT CONDITIONS	
TEMP.	25 F
PRESSURE	29.62 IN.
HUMIDITY	81 PCT

	FROM NITROGEN COUNTS	FROM CO/CO2 CALCN.
AIR/FUEL RATIO		12.86
DILUTION RATIO	3.479	3.491
EXH/AIR RATIO		.965
SCF EXH/MILE		118.8
MILES/GALLON	8.4	8.3

IDLE	
DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	18.5
RPM	525

ROUTE	ROAD-3
TRAFFIC	1
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1525 PPMC	5305 PPMC	.0227	5323 PPMC	.0227
HC FID					
TOTAL	2693 PPMC	9368 PPMC	.0400	9400 PPMC	.0402
OLEFINS	301 PPMC	1047 PPMC	.0045	1051 PPMC	.0045
AROMAT.	907 PPMC	3155 PPMC	.0124	3166 PPMC	.0124
PARAFS.	1485 PPMC	5166 PPMC	.0232	5184 PPMC	.0232
NOX	373 PPM	1298 PPM	.0184	1302 PPM	.0185
CO	1.10 PCT	3.83 PCT	.3306	3.84 PCT	.3317
CO2	3.49 PCT	12.14 PCT	1.6478	12.18 PCT	1.6535
O2	.56 PCT	1.95 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	146
2	151
3	160
4	155
5	158
6	150
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 46-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	76.	.973
SAMP	2052	73.	.983
CARB	2072	54.	1.050

ODOMETER	17465
TEST MILES	8.400
TEST MINUTES	25.58
CALC. MILES/HR	19.70
COUNT RATIO	.990
AVE. COUNTS/MIN	281.8
CUB. FT./COUNT	.342
SCF AIR/MILE	86.9

LICENSE NO.	123D19
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	4M/
AXLE RATIO	.00/4.57
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	12/13/66
TIME	1.50
GVW, LB	7500
LOAD, LB	1450
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	30 F
PRESSURE	29.53 IN.
HUMIDITY	78 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.930
MILES/GALLON	11.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.78
DILUTION RATIO	2.959
EXH/AIR RATIO	.967
SCF EXH/MILE	84.1
MILES/GALLON	11.5

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	17.6
RPM	500

ROUTE	ROAD-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2750 PPMC	8057 PPMC	.0244	8139 PPMC	.0246
HC FID					
TOTAL	4490 PPMC	13154 PPMC	.0398	13288 PPMC	.0402
OLEFINS	445 PPMC	1304 PPMC	.0039	1317 PPMC	.0040
AROMAT.	1225 PPMC	3589 PPMC	.0096	3625 PPMC	.0097
PARAFS.	2820 PPMC	8262 PPMC	.0262	8346 PPMC	.0265
NOX	380 PPM	1113 PPM	.0112	1125 PPM	.0113
CO	1.37 PCT	4.01 PCT	.2453	4.05 PCT	.2478
CO2	4.07 PCT	11.92 PCT	1.1449	12.05 PCT	1.1566
O2	.72 PCT	2.11 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	172
3	168
4	160
5	161
6	156
7	161
8	168

8-67

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 46-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	70.	.993
SAMP	2150	71.	.990
CARB	2173	54.	1.050

ODOMETER	17491
TEST MILES	8.400
TEST MINUTES	26.62
CALC. MILES/HR	18.93
COUNT RATIO	.989
AVE. COUNTS/MIN	281.8
CUB. FT./COUNT	.342
SCF AIR/MILE	91.1

LICENSE NO.	123D19
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	4M/
AXLE RATIO	.00/4.57
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	12/13/66
TIME	3.46
GVW. LB	7500
LOAD. LB	1450
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK. SQ. IN.	4.9
PCV. CFM	1.6

AMBIENT CONDITIONS

TEMP.	31 F
PRESSURE	29.50 IN.
HUMIDITY	75 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.867
MILES/GALLON	11.0

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.79
DILUTION RATIO	2.888
EXH/AIR RATIO	.967
SCF EXH/MILE	88.0
MILES/GALLON	10.9

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	17.6
RPM	500

ROUTE	ROAD-2
TRAFFIC	3
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2935 PPMC	8414 PPMC	.0266	8476 PPMC	.0268
HC FID					
TOTAL	4928 PPMC	14128 PPMC	.0447	14231 PPMC	.0451
OLEFINS	229 PPMC	656 PPMC	.0021	661 PPMC	.0021
AROMAT.	1511 PPMC	4332 PPMC	.0123	4363 PPMC	.0124
PARAFS.	3188 PPMC	9139 PPMC	.0304	9206 PPMC	.0306
NOX	353 PPM	1012 PPM	.0106	1019 PPM	.0107
CO	1.39 PCT	3.98 PCT	.2550	4.01 PCT	.2569
CO_2	4.18 PCT	11.98 PCT	1.2050	12.07 PCT	1.2139
O_2	.72 PCT	2.06 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	155
2	172
3	168
4	160
5	161
6	156
7	161
8	168

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 47-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	71.	.990
SAMP	2567	69.	.997
CARB	2578	38.	1.111

ODOMETER	1792
TEST MILES	8.400
TEST MINUTES	24.31
CALC. MILES/HR	20.73
COUNT RATIO	.996
AVE. COUNTS/MIN	281.8
CUB. FT./COUNT	.342
SCF AIR/MILE	114.3

LICENSE NO.	13M614
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	.00/6.17
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C1

DATE	12/14/66
TIME	1.20
GVW, LB	16000
LOAD, LB	4850
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	24 F
PRESSURE	29.46 IN.
HUMIDITY	81 PCT

	FROM NITROGEN COUNTS	FROM CO/CO2 CALCN.
DILUTION RATIO	3.708	3.708
MILES/GALLON	8.	8.4

AIR/FUEL RATIO	12.55
DILUTION RATIO	3.708
EXH/AIR RATIO	.972
SCF EXH/MILE	111.1

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	18.2
RPM	525

ROUTE	ROAD-3
TRAFFIC	1
RPM/MPH	
HIGH GEAR	58.20
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1465 PPMC	5433 PPMC	.0217	5433 PPMC	.0217
HC FID					
TOTAL	2490 PPMC	9234 PPMC	.0369	9234 PPMC	.0369
OLEFINS	265 PPMC	983 PPMC	.0039	983 PPMC	.0039
AROMAT.	746 PPMC	2767 PPMC	.0100	2767 PPMC	.0100
PARAFS.	1479 PPMC	5485 PPMC	.0230	5485 PPMC	.0230
NOX	320 PPM	1187 PPM	.0157	1187 PPM	.0157
CO	1.30 PCT	4.82 PCT	.3896	4.82 PCT	.3896
CO2	3.29 PCT	12.20 PCT	1.5489	12.20 PCT	1.5489
O2	.41 PCT	1.52 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	175
3	181
4	183
5	173
6	154
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.552 IS LOWER THAN 3.708 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 47-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	50.	1.064
SAMP	2531	59.	1.031
CARB	2564	40.	1.103

ODOMETER	1816
TEST MILES	8.400
TEST MINUTES	24.49
CALC. MILES/HR	20.58
COUNT RATIO	.987
AVE. COUNTS/MIN	281.8
CUB. FT./COUNT	.342
SCF AIR/MILE	112.9

LICENSE NO.	13M614
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	.00/6.17
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C1

DATE	12/14/66
TIME	2.55
GVW, LB	16000
LOAD, LB	4850
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	24 F
PRESSURE	29.47 IN.
HUMIDITY	81 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.854
MILES/GALLON	8.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.57
DILUTION RATIO	3.854
EXH/AIR RATIO	.972
SCF EXH/MILE	109.7
MILES/GALLON	8.1

IDLE

DWELL ANGLE	0
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	18.2
RPM	525

ROUTE	ROAD-3
TRAFFIC	2

RPM/MPH

HIGH GEAR	58.20
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1490 PPMC	5743 PPMC	.0227	5743 PPMC	.0227
HC FID					
TOTAL	2528 PPMC	9743 PPMC	.0384	9743 PPMC	.0384
OLEFINS	253 PPMC	975 PPMC	.0038	975 PPMC	.0038
AROMAT.	733 PPMC	2825 PPMC	.0100	2825 PPMC	.0100
PARAFS.	1542 PPMC	5943 PPMC	.0246	5943 PPMC	.0246
NOX	333 PPM	1283 PPM	.0168	1283 PPM	.0168
CO	1.30 PCT	5.01 PCT	.3997	5.01 PCT	.3997
CO2	3.33 PCT	12.83 PCT	1.6087	12.83 PCT	1.6087
O2	.41 PCT	1.58 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	175
3	181
4	183
5	173
6	154
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.518 IS LOWER THAN 3.854 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 48-1

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	78.	.967
SAMP	3850	76.	.973
CARB	3875	57.	1.039

ODOMETER	39726
TEST MILES	9.140
TEST MINUTES	25.84
CALC. MILES/HR	21.22
COUNT RATIO	.994
AVE. COUNTS/MIN	281.8
CUB. FT./COUNT	.342
SCF AIR/MILE	146.8

LICENSE NO.	903753
MODEL YEAR	1962
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.14/8.81
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	12/16/66
TIME	10.00
GVW, LB	21000
LOAD, LB	6550
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	36 F
PRESSURE	29.37 IN.
HUMIDITY	82 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.580
MILES/GALLON	7.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.70
DILUTION RATIO	3.609
EXH/AIR RATIO	.948
SCF EXH/MILE	139.2
MILES/GALLON	7.7

IDLE

DWELL ANGLE	0
IGN. TIMING	.0
A/F RATIO	12.5
MAN. VAC.	19.3
RPM	500

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	53.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	810 PPMC	2900 PPMC	.0145	2923 PPMC	.0146
HC FID					
TOTAL	1550 PPMC	5549 PPMC	.0278	5594 PPMC	.0280
OLEFINS	220 PPMC	788 PPMC	.0039	794 PPMC	.0040
AROMAT.	517 PPMC	1851 PPMC	.0086	1866 PPMC	.0086
PARAFS.	813 PPMC	2911 PPMC	.0153	2934 PPMC	.0154
NOX	560 PPM	2005 PPM	.0333	2021 PPM	.0336
CO	.50 PCT	1.79 PCT	.1812	1.80 PCT	.1826
CO2	3.69 PCT	13.21 PCT	2.1005	13.32 PCT	2.1174
O2	.48 PCT	1.72 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	147
2	131
3	136
4	140
5	139
6	132
7	148
8	140

481 RUN IN 4TH TOP GEAR TO AVOID 5TH OVERDRIVE.

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 48-8

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	78.	.967
SAMP	3759	76.	.973
CARB	3767	57.	1.039

ODOMETER	39750
TEST MILES	9.140
TEST MINUTES	27.03
CALC. MILES/HR	20.29
COUNT RATIO	.998
AVE. COUNTS/MIN	281.8
CUB. FT./COUNT	.342
SCF AIR/MILE	142.6

LICENSE NO.	903753
MODEL YEAR	1962
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.14/8.81
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	12/16/66
TIME	2.27
GVW. LB	21000
LOAD. LB	6550
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK. SQ. IN.	.0
PCV. CFM	.0

AMBIENT CONDITIONS

TEMP.	36 F
PRESSURE	29.35 IN.
HUMIDITY	84 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.643
MILES/GALLON	7.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.63
DILUTION RATIO	3.666
EXH/AIR RATIO	.949
SCF EXH/MILE	135.4
MILES/GALLON	7.8

IDLE	
DWELL ANGLE	0
IGN. TIMING	.0
A/F RATIO	12.5
MAN. VAC.	19.3
RPM	500

ROUTE	ROAD-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	53.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	870 PPMC	3169 PPMC	.0154	3190 PPMC	.0155
HC FID TOTAL	1662 PPMC	6054 PPMC	.0295	6093 PPMC	.0297
OLEFINS	235 PPMC	856 PPMC	.0042	862 PPMC	.0042
AROMAT.	570 PPMC	2076 PPMC	.0094	2090 PPMC	.0094
PARAFS.	857 PPMC	3122 PPMC	.0159	3142 PPMC	.0160
NOX	527 PPM	1920 PPM	.0310	1932 PPM	.0312
CO	.53 PCT	1.93 PCT	.1900	1.94 PCT	.1913
CO2	3.62 PCT	13.19 PCT	2.0394	13.27 PCT	2.0526
O2	.51 PCT	1.86 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	147
2	131
3	136
4	140
5	139
6	132
7	148
8	140

488 RUN IN 4TH TOP GEAR.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 50-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	8000	74.	.980
SAMP	3464	74.	.980
CARB	3474	75.	.977

ODOMETER	10764
TEST MILES	8.400
TEST MINUTES	27.53
CALC. MILES/HR	18.31
COUNT RATIO	.997
AVE. COUNTS/MIN	279.5
CUB. FT./COUNT	.345
SCF AIR/MILE	134.4

LICENSE NO.	50035C
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I1

DATE	12/17/66
TIME	1.45
GVW, LB	18200
LOAD, LB	5050
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	41 F
PRESSURE	29.10 IN.
HUMIDITY	73 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.309
MILES/GALLON	8.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.42
DILUTION RATIO	3.323
EXH/AIR RATIO	.954
SCF EXH/MILE	128.2
MILES/GALLON	8.0

IDLE

DWELL ANGLE	0
IGN. TIMING	.0
A/F RATIO	12.7
MAN. VAC.	18.4
RPM	500

ROUTE	ROAD-3
TRAFFIC	2

RPM/MPH

HIGH GEAR	52.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1260 PPMC	4170 PPMC	.0192	4187 PPMC	.0193
HC FID					
TOTAL	2427 PPMC	8032 PPMC	.0370	8066 PPMC	.0372
OLEFINS	327 PPMC	1082 PPMC	.0050	1087 PPMC	.0050
AROMAT.	656 PPMC	2171 PPMC	.0089	2180 PPMC	.0090
PARAFS.	1444 PPMC	4779 PPMC	.0231	4799 PPMC	.0232
NOX	440 PPM	1456 PPM	.0223	1462 PPM	.0224
CO	.74 PCT	2.45 PCT	.2283	2.46 PCT	.2292
CO2	3.93 PCT	13.01 PCT	1.9048	13.06 PCT	1.9128
O2	.43 PCT	1.42 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	165
2	155
3	151
4	155
5	154
6	151
7	154
8	156

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 50-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	73.	.983
SAMP	3504	75.	.977
CARB	3500	70.	.993

ODOMETER	10786
TEST MILES	8.400
TEST MINUTES	28.06
CALC. MILES/HR	17.96
COUNT RATIO	1.001
AVE. COUNTS/MIN	279.5
CUR. FT./COUNT	.345
SCF AIR/MILE	137.7

LICENSE NO.	50035C
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I1

DATE	12/17/66
TIME	3.53
GVW, LB	18200
LOAD, LB	5050
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	41 F
PRESSURE	29.10 IN.
HUMIDITY	76 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.299
MILES/GALLON	7.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.42
DILUTION RATIO	3.300
EXH/AIR RATIO	.954
SCF EXH/MILE	131.3
MILES/GALLON	7.8

IDLE

DWELL ANGLE	0
IGN. TIMING	.0
A/F RATIO	12.7
MAN. VAC.	18.4
RPM	500

ROUTE	ROAD-3
TRAFFIC	3
RPM/MPH	
HIGH GEAR	52.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1290 PPMC	4255 PPMC	.0201	4258 PPMC	.0201
HC FID					
TOTAL	2508 PPMC	8273 PPMC	.0391	8278 PPMC	.0391
OLEFINS	346 PPMC	1141 PPMC	.0054	1142 PPMC	.0054
AROMAT.	702 PPMC	2316 PPMC	.0098	2317 PPMC	.0098
PARAFS.	1460 PPMC	4816 PPMC	.0239	4819 PPMC	.0239
NOX	467 PPM	1540 PPM	.0242	1541 PPM	.0242
CO	.74 PCT	2.44 PCT	.2330	2.44 PCT	.2332
CO2	3.96 PCT	13.06 PCT	1.9594	13.07 PCT	1.9605
O2	.43 PCT	1.42 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	165
2	155
3	151
4	155
5	154
6	151
7	154
8	156

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 101-3

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	75.	.977
SAMP	5503	77.	.970
CARB	5494	72.	.987

ODOMETER	7740
TEST MILES	9.140
TEST MINUTES	26.44
CALC. MILES/HR	20.74
COUNT RATIO	1.002
AVE. COUNTS/MIN	273.9
CUB. FT./COUNT	.361
SCF AIR/MILE	210.1

LICENSE NO.	16M797
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	4/27/67
TIME	2.00
GVW, LB	30000
LOAD, LB	11000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	53 F
PRESSURE	29.46 IN.
HUMIDITY	32 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.464
MILES/GALLON	5.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.03
DILUTION RATIO	2.553
EXH/AIR RATIO	.942
SCF EXH/MILE	197.9
MILES/GALLON	5.5

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.2
RPM	590

ROUTE	DLA-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1605 PPMC	3954 PPMC	.0281	4097 PPMC	.0292
HC FID					
TOTAL	2780 PPMC	6849 PPMC	.0487	7097 PPMC	.0505
OLEFINS	823 PPMC	2028 PPMC	.0144	2101 PPMC	.0149
AROMAT.	587 PPMC	1446 PPMC	.0091	1498 PPMC	.0095
PARAFS.	1370 PPMC	3375 PPMC	.0252	3497 PPMC	.0261
NOX	720 PPM	1774 PPM	.0419	1838 PPM	.0434
CO	.52 PCT	1.28 PCT	.1843	1.33 PCT	.1910
CO2	5.27 PCT	12.98 PCT	2.9353	13.45 PCT	3.0416
O2	.87 PCT	2.14 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	174
2	169
3	177
4	175
5	169
6	176
7	170
8	172

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 101-4

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	8000	71.	.990
SAMP	5488	74.	.980
CARB	5457	72.	.987

ODOMETER	7765
TEST MILES	9.140
TEST MINUTES	26.86
CALC. MILES/HR	20.42
COUNT RATIO	1.006
AVE. COUNTS/MIN	273.9
CUB. FT./COUNT	.361
SCF AIR/MILE	209.8

LICENSE NO.	16M797
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	4/28/67
TIME	10.00
GVW, LB	30000
LOAD, LB	11000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	54 F
PRESSURE	29.63 IN.
HUMIDITY	35 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.473
MILES/GALLON	5.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.89
DILUTION RATIO	2.603
EXH/AIR RATIO	.945
SCF EXH/MILE	198.2
MILES/GALLON	5.4

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	580

ROUTE	DLA-4
TRAFFIC	2

RPM/MPH

HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1760 PPMC	4352 PPMC	.0310	4581 PPMC	.0326
HC FID					
TOTAL	3006 PPMC	7433 PPMC	.0530	7824 PPMC	.0558
OLEFINS	710 PPMC	1756 PPMC	.0125	1848 PPMC	.0132
AROMAT.	877 PPMC	2168 PPMC	.0142	2283 PPMC	.0150
PARAFS.	1419 PPMC	3509 PPMC	.0262	3693 PPMC	.0276
NOX	733 PPM	1812 PPM	.0429	1908 PPM	.0451
CO	.58 PCT	1.43 PCT	.2066	1.51 PCT	.2175
CO2	5.15 PCT	12.73 PCT	2.8823	13.40 PCT	3.0341
O2	.81 PCT	2.00 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	174
2	169
3	177
4	175
5	169
6	176
7	170
8	172

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 103-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7799	69.	.997
SAMP	4288	78.	.967
CARB	4273	61.	1.024

ODOMETER	2647
TEST MILES	8.100
TEST MINUTES	26.73
CALC. MILES/HR	18.18
COUNT RATIO	1.004
AVE. COUNTS/MIN	223.2
CUB. FT./COUNT	.443
SCF AIR/MILE	231.9

LICENSE NO.	15M618
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	4/12/67
TIME	11.37
GVW, LB	20000
LOAD, LB	5000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	47 F
PRESSURE	29.15 IN.
HUMIDITY	60 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.875
MILES/GALLON	5.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.57
DILUTION RATIO	3.068
EXH/AIR RATIO	.951
SCF EXH/MILE	220.5
MILES/GALLON	4.7

IDLE

DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	20.0
RPM	600

ROUTE	PLA
TRAFFIC	1

RPM/MPH

HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1865 PPMC	5362 PPMC	.0425	5721 PPMC	.0454
HC FID					
TOTAL	3043 PPMC	8748 PPMC	.0694	9335 PPMC	.0740
OLEFINS	796 PPMC	2288 PPMC	.0181	2442 PPMC	.0193
AROMAT.	796 PPMC	2288 PPMC	.0165	2442 PPMC	.0176
PARAFS.	1451 PPMC	4171 PPMC	.0347	4451 PPMC	.0370
NOX	760 PPM	2185 PPM	.0575	2331 PPM	.0614
CO	.68 PCT	1.95 PCT	.3133	2.09 PCT	.3343
CO2	4.31 PCT	12.39 PCT	3.1203	13.22 PCT	3.3295
O2	.88 PCT	2.53 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

1032 PONTIAC RUN

B-102

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 103-3

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	74.	.980
SAMP	4194	78.	.967
CARB	4186	57.	1.039

ODOMETER	2656
TEST MILES	8.100
TEST MINUTES	26.54
CALC. MILES/HR	18.31
COUNT RATIO	1.002
AVE. COUNTS/MIN	223.2
CUB. FT./COUNT	.443
SCF AIR/MILE	230.6

LICENSE NO.	15M618
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	4/12/67
TIME	12.35
GVW, LB	20000
LOAD, LB	5000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	43 F
PRESSURE	29.15 IN.
HUMIDITY	60 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.933
MILES/GALLON	5.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.54
DILUTION RATIO	3.127
EXH/AIR RATIO	.951
SCF EXH/MILE	219.3
MILES/GALLON	4.7

IDLE

DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	20.0
RPM	600

ROUTE	PLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2045 PPMC	5999 PPMC	.0473	6394 PPMC	.0504
HC FID					
TOTAL	3441 PPMC	10093 PPMC	.0796	10759 PPMC	.0849
OLEFINS	847 PPMC	2484 PPMC	.0196	2648 PPMC	.0209
AROMAT.	950 PPMC	2787 PPMC	.0201	2970 PPMC	.0215
PARAFS.	1644 PPMC	4822 PPMC	.0399	5140 PPMC	.0425
NOX	727 PPM	2132 PPM	.0558	2273 PPM	.0595
CO	.69 PCT	2.02 PCT	.3227	2.16 PCT	.3440
CO2	4.22 PCT	12.38 PCT	3.1012	13.20 PCT	3.3058
O2	.80 PCT	2.35 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

1033 PONTIAC RUN

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 103-5

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8001	79.	.964
SAMP	3959	84.	.948
CARB	3958	62.	1.021

ODOMETER	27877
TEST MILES	8.400
TEST MINUTES	26.20
CALC. MILES/HR	19.24
COUNT RATIO	1.000
AVE. COUNTS/MIN	273.9
CUB. FT./COUNT	.361
SCF AIR/MILE	170.5

LICENSE NO.	15M618
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	4/19/67
TIME	10.30
GVW, LB	20000
LOAD, LB	5000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	46 F
PRESSURE	29.55 IN.
HUMIDITY	64 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.055
MILES/GALLON	6.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.59
DILUTION RATIO	3.229
EXH/AIR RATIO	.950
SCF EXH/MILE	162.1
MILES/GALLON	6.4

IDLE	
DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	19.5
RPM	580

ROUTE	DLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1740 PPMC	5315 PPMC	.0310	5619 PPMC	.0327
HC FID					
TOTAL	2959 PPMC	9039 PPMC	.0527	9555 PPMC	.0557
OLEFINS	713 PPMC	2178 PPMC	.0127	2302 PPMC	.0134
AROMAT.	909 PPMC	2777 PPMC	.0150	2935 PPMC	.0159
PARAFS.	1337 PPMC	4084 PPMC	.0250	4317 PPMC	.0264
NOX	713 PPM	2178 PPM	.0421	2302 PPM	.0445
CO	.63 PCT	1.92 PCT	.2267	2.03 PCT	.2397
CO2	4.10 PCT	12.52 PCT	2.3183	13.24 PCT	2.4506
O2	.73 PCT	2.23 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

B-103

B-104

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 103-6

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	86.	.941
SAMP	4016	89.	.932
CARB	4013	67.	1.003

ODOMETER	28098
TEST MILES	8.400
TEST MINUTES	26.00
CALC. MILES/HR	19.38
COUNT RATIO	1.001
AVE. COUNTS/MIN	273.9
CUB. FT./COUNT	.361
SCF AIR/MILE	169.5

LICENSE NO.	15M618
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	4/19/67
TIME	2.00
GVW, LB	20000
LOAD, LB	5000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	51 F
PRESSURE	29.52 IN.
HUMIDITY	67 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.012
MILES/GALLON	6.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.66
DILUTION RATIO	3.188
EXH/AIR RATIO	.949
SCF EXH/MILE	160.8
MILES/GALLON	6.5

IDLE	
DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	19.6
RPM	580

ROUTE	DLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1780 PPMC	5361 PPMC	.0310	5674 PPMC	.0328
HC FID					
TOTAL	2959 PPMC	8912 PPMC	.0515	9432 PPMC	.0545
OLEFINS	688 PPMC	2072 PPMC	.0120	2193 PPMC	.0127
AROMAT.	869 PPMC	2617 PPMC	.0140	2770 PPMC	.0148
PARAFS.	1402 PPMC	4223 PPMC	.0256	4469 PPMC	.0271
NOX	787 PPM	2370 PPM	.0455	2509 PPM	.0482
CO	.59 PCT	1.78 PCT	.2078	1.88 PCT	.2199
CO2	4.17 PCT	12.56 PCT	2.3069	13.29 PCT	2.4416
O2	.76 PCT	2.29 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 104-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5000	70.	.993
SAMP	2417	81.	.957
CARB	2407	81.	.957

ODOMETER	47572
TEST MILES	8.400
TEST MINUTES	25.21
CALC. MILES/HR	19.99
COUNT RATIO	1.004
AVE. COUNTS/MIN	273.9
CUR. FT./COUNT	.361
SCF AIR/MILE	96.0

LICENSE NO.	5239CK
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	4.10/ .00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	4/ 6/67
TIME	2.14
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	51 F
PRESSURE	29.30 IN.
HUMIDITY	89 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.147
MILES/GALLON	11.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.23
DILUTION RATIO	3.310
EXH/AIR RATIO	.957
SCF EXH/MILE	91.9
MILES/GALLON	10.7

IDLE

DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	20.0
RPM	475

ROUTE	DLA-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2790 PPMC	8779 PPMC	.0290	9234 PPMC	.0305
HC FID					
TOTAL	4335 PPMC	13641 PPMC	.0451	14348 PPMC	.0474
OLEFINS	800 PPMC	2517 PPMC	.0083	2648 PPMC	.0087
AROMAT.	1120 PPMC	3524 PPMC	.0104	3707 PPMC	.0110
PARAFS.	2415 PPMC	7599 PPMC	.0263	7993 PPMC	.0277
NOX	526 PPM	1655 PPM	.0182	1741 PPM	.0191
CO	.88 PCT	2.77 PCT	.1849	2.91 PCT	.1945
CO2	3.86 PCT	12.15 PCT	1.2745	12.78 PCT	1.3406
O2	.57 PCT	1.79 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

B-105

101-8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 104-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5001	72.	.987
SAMP	2320	70.	.993
CARB	2314	66.	1.007

ODOMETER	47597
TEST MILES	8.400
TEST MINUTES	23.53
CALC. MILES/HR	21.42
COUNT RATIO	1.003
AVE. COUNTS/MIN	273.9
CUB. FT./COUNT	.361
SCF AIR/MILE	97.2

LICENSE NO.	5239CK
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	4.10/ .00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	4/ 7/67
TIME	9.24
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	40 F
PRESSURE	29.24 IN.
HUMIDITY	89 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.141
MILES/GALLON	11.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.43
DILUTION RATIO	3.335
EXH/AIR RATIO	.953
SCF EXH/MILE	92.7
MILES/GALLON	10.8

IDLE

DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	20.0
RPM	450

ROUTE	DLA-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2580 PPMC	8104 PPMC	.0270	8605 PPMC	.0287
HC FID					
TOTAL	4001 PPMC	12567 PPMC	.0419	13344 PPMC	.0445
OLEFINS	813 PPMC	2554 PPMC	.0085	2711 PPMC	.0090
AROMAT.	984 PPMC	3091 PPMC	.0092	3282 PPMC	.0097
PARAFS.	2204 PPMC	6923 PPMC	.0242	7351 PPMC	.0257
NOX	560 PPM	1759 PPM	.0195	1868 PPM	.0207
CO	.73 PCT	2.29 PCT	.1545	2.43 PCT	.1641
CO2	3.92 PCT	12.31 PCT	1.3038	13.07 PCT	1.3843
O2	.62 PCT	1.95 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 104-3

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5000	70.	.993
SAMP	2297	71.	.990
CARB	2287	85.	.945

ODOMETER	47543
TEST MILES	7.600
TEST MINUTES	23.08
CALC. MILES/HR	19.76
COUNT RATIO	1.004
AVE. COUNTS/MIN	273.9
CUB. FT./COUNT	.361
SCF AIR/MILE	97.2

LICENSE NO.	5239CK
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	4.10/ .00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	4/ 5/67
TIME	11.40
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	54 F
PRESSURE	28.68 IN.
HUMIDITY	90 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.184
MILES/GALLON	11.1

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.98
DILUTION RATIO	3.416
EXH/AIR RATIO	.963
SCF EXH/MILE	93.5
MILES/GALLON	10.4

IDLE	
DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	20.0
RPM	450

ROUTE	PLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2630 PPMC	8374 PPMC	.0282	8984 PPMC	.0302
HC FID					
TOTAL	4133 PPMC	13160 PPMC	.0443	14119 PPMC	.0475
OLEFINS	660 PPMC	2102 PPMC	.0071	2255 PPMC	.0076
AROMAT.	1193 PPMC	3799 PPMC	.0116	4075 PPMC	.0124
PARAFS.	2280 PPMC	7260 PPMC	.0256	7789 PPMC	.0275
NOX	420 PPM	1337 PPM	.0149	1435 PPM	.0160
CO	1.04 PCT	3.31 PCT	.2252	3.55 PCT	.2416
CO2	3.62 PCT	11.53 PCT	1.2316	12.37 PCT	1.3213
O2	.57 PCT	1.81 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

1043 PONTIAC RUN

8-107

B-168

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 104-9

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5000	97.	.908
SAMP	2520	104.	.888
CARB	2520	107.	.880

ODOMETER	47501
TEST MILES	7.600
TEST MINUTES	24.13
CALC. MILES/HR	18.90
COUNT RATIO	1.000
AVE. COUNTS/MIN	273.9
CUB. FT./COUNT	.361
SCF AIR/MILE	100.1

LICENSE NO.	5239CK
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	4.10/ .00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	4/ 4/67
TIME	12.30
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	63 F
PRESSURE	28.89 IN.
HUMIDITY	80 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.029
MILES/GALLON	10.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.59
DILUTION RATIO	3.158
EXH/AIR RATIO	.971
SCF EXH/MILE	97.3
MILES/GALLON	9.8

IDLE

DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	20.0
RPM	450

ROUTE	PLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2470 PPMC	7482 PPMC	.0262	7801 PPMC	.0273
HC FID					
TOTAL	4157 PPMC	12593 PPMC	.0441	13130 PPMC	.0459
OLEFINS	937 PPMC	2838 PPMC	.0099	2959 PPMC	.0103
AROMAT.	1102 PPMC	3338 PPMC	.0106	3481 PPMC	.0110
PARAFS.	2118 PPMC	6416 PPMC	.0235	6690 PPMC	.0245
NOX	367 PPM	1112 PPM	.0129	1159 PPM	.0135
CO	1.43 PCT	4.33 PCT	.3063	4.52 PCT	.3194
CO_2	3.72 PCT	11.27 PCT	1.2521	11.75 PCT	1.3055
O_2	.53 PCT	1.61 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

1049 PONTIAC RUN

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 105-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	6000	63.	1.017
SAMP	2606	75.	.977
CARB	2649	65.	1.010

ODOMETER	21309
TEST MILES	8.400
TEST MINUTES	26.30
CALC. MILES/HR	19.16
COUNT RATIO	.984
AVE. COUNTS/MIN	275.6
CUB. FT./COUNT	.359
SCF AIR/MILE	112.3

LICENSE NO.	15M785
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	4M/
AXLE RATIO	6.33/8.81
CARB. NO.	F7
DIST. NO.	F7
AIR CL. NO.	F1

DATE	5/ 3/67
TIME	10.30
GVW, LB	18000
LOAD, LB	5800
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	43 F
PRESSURE	29.51 IN.
HUMIDITY	49 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.398
MILES/GALLON	9.0

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.09
DILUTION RATIO	3.398
EXH/AIR RATIO	.960
SCF EXH/MILE	107.9
MILES/GALLON	9.0

IDLE

DWELL ANGLE	36
IGN. TIMING	-6.0
A/F RATIO	13.2
MAN. VAC.	17.5
RPM	525

ROUTE	DLA
TRAFFIC	2

RPM/MPH

HIGH GEAR	57.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1315 PPMC	4469 PPMC	.0173	4469 PPMC	.0173
HC FID					
TOTAL	2401 PPMC	8159 PPMC	.0317	8159 PPMC	.0317
OLEFINS	470 PPMC	1597 PPMC	.0062	1597 PPMC	.0062
AROMAT.	548 PPMC	1862 PPMC	.0063	1862 PPMC	.0063
PARAFS.	1383 PPMC	4700 PPMC	.0191	4700 PPMC	.0191
NOX	453 PPM	1539 PPM	.0198	1539 PPM	.0198
CO	1.00 PCT	3.40 PCT	.2665	3.40 PCT	.2665
CO2	3.83 PCT	13.02 PCT	1.6039	13.02 PCT	1.6039
O2	.48 PCT	1.63 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	164
3	169
4	165
5	162
6	164
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.275 IS LOWER THAN 3.398 FROM NITROGEN COUNTS

60-109

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 105-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	6000	79.	.964
SAMP	2942	79.	.964
CARB	2940	70.	.993

ODOMETER	21331
TEST MILES	8.400
TEST MINUTES	26.41
CALC. MILES/HR	19.08
COUNT RATIO	1.001
AVE. COUNTS/MIN	275.6
CUR. FT./COUNT	.359
SCF AIR/MILE	122.3

LICENSE NO.	15M785
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	4M/
AXLE RATIO	6.33/8.81
CARB. NO.	F7
DIST. NO.	F7
AIR CL. NO.	F1

DATE	5/ 3/67
TIME	2.00
GVW, LB	18000
LOAD, LB	5800
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	50 F
PRESSURE	29.47 IN.
HUMIDITY	47 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.039
MILES/GALLON	8.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.99
DILUTION RATIO	3.039
EXH/AIR RATIO	.962
SCF EXH/MILE	117.7
MILES/GALLON	8.5

IDLE

DWELL ANGLE	36
IGN. TIMING	-6.0
A/F RATIO	13.2
MAN. VAC.	18.0
RPM	525

ROUTE	DLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	57.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1475 PPMC	4483 PPMC	.0190	4483 PPMC	.0190
HC FID					
TOTAL	2663 PPMC	8094 PPMC	.0343	8094 PPMC	.0343
OLEFINS	526 PPMC	1599 PPMC	.0068	1599 PPMC	.0068
AROMAT.	629 PPMC	1912 PPMC	.0071	1912 PPMC	.0071
PARAFS.	1508 PPMC	4583 PPMC	.0203	4583 PPMC	.0203
NOX	467 PPM	1419 PPM	.0199	1419 PPM	.0199
CO	1.17 PCT	3.56 PCT	.3042	3.56 PCT	.3042
CO2	4.10 PCT	12.46 PCT	1.6751	12.46 PCT	1.6751
O2	.49 PCT	1.49 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	164
3	169
4	165
5	162
6	164
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.019 IS LOWER THAN 3.039 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 106-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	73.	.983
SAMP	4153	85.	.945
CARB	4143	67.	1.003

ODOMETER	36614
TEST MILES	8.400
TEST MINUTES	26.04
CALC. MILES/HR	19.35
COUNT RATIO	1.002
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	170.5

LICENSE NO.	5205CD
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F9
DIST. NO.	F9
AIR CL. NO.	F4

DATE	5/ 8/67
TIME	9.30
GVW, LB	20000
LOAD, LB	4625
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	51 F
PRESSURE	28.53 IN.
HUMIDITY	74 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.005
MILES/GALLON	6.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.38
DILUTION RATIO	3.125
EXH/AIR RATIO	.954
SCF EXH/MILE	162.7
MILES/GALLON	5.9

IDLE

DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	13.2
MAN. VAC.	18.5
RPM	515

ROUTE	DLA
TRAFFIC	2

RPM/MPH

HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3630 PPMC	10908 PPMC	.0638	11344 PPMC	.0664
HC FID					
TOTAL	6134 PPMC	18433 PPMC	.1079	19169 PPMC	.1122
OLEFINS	1227 PPMC	3687 PPMC	.0216	3834 PPMC	.0224
AROMAT.	818 PPMC	2458 PPMC	.0109	2556 PPMC	.0113
PARAFS.	4089 PPMC	12288 PPMC	.0754	12778 PPMC	.0784
NOX	667 PPM	2004 PPM	.0389	2084 PPM	.0405
CO	.82 PCT	2.46 PCT	.2915	2.56 PCT	.3032
CO2	4.16 PCT	12.50 PCT	2.3236	13.00 PCT	2.4164
O2	.71 PCT	2.13 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	130
2	137
3	131
4	135
5	140
6	137
7	136
8	123

8-11

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 106-3

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	8000	70.	.993
SAMP	4473	71.	.990
CARB	4475	64.	1.014

ODOMETER	36636
TEST MILES	8.400
TEST MINUTES	26.32
CALC. MILES/HR	19.15
COUNT RATIO	1.000
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	186.1

LICENSE NO.	5205CD
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F9
DIST. NO.	F9
AIR CL. NO.	F4

DATE	5/ 8/67
TIME	1.15
GVW, LB	20000
LOAD, LB	4625
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	52 F
PRESSURE	28.54 IN.
HUMIDITY	71 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.795
MILES/GALLON	5.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.36
DILUTION RATIO	2.928
EXH/AIR RATIO	.955
SCF EXH/MILE	177.7
MILES/GALLON	5.4

IDLE

DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	13.2
MAN. VAC.	18.5
RPM	515

ROUTE	DLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3950 PPMC	11039 PPMC	.0705	11567 PPMC	.0739
HC FID					
TOTAL	6474 PPMC	18092 PPMC	.1156	18957 PPMC	.1212
OLEFINS	1295 PPMC	3619 PPMC	.0231	3792 PPMC	.0242
AROMAT.	817 PPMC	2283 PPMC	.0108	2392 PPMC	.0113
PARAFS.	4362 PPMC	12190 PPMC	.0817	12773 PPMC	.0856
NOX	680 PPM	1900 PPM	.0403	1991 PPM	.0423
CO	.89 PCT	2.49 PCT	.3214	2.61 PCT	.3367
CO2	4.43 PCT	12.38 PCT	2.5131	12.97 PCT	2.6333
O2	.81 PCT	2.26 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	130
2	137
3	131
4	135
5	140
6	137
7	136
8	123

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 107-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	7000	72.	.987
SAMP	3194	80.	.960
CARB	3180	61.	1.024

ODOMETER	4383
TEST MILES	8.400
TEST MINUTES	25.92
CALC. MILES/HR	19.44
COUNT RATIO	1.004
AVE. COUNTS/MIN	275.1
CUB. FT./COUNT	.360
SCF AIR/MILE	133.7

LICENSE NO.	16M400
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	5/ 9/67
TIME	9.45
GVW, LB	19500
LOAD, LB	5675
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.3

AMBIENT CONDITIONS

TEMP.	46 F
PRESSURE	28.89 IN.
HUMIDITY	71 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.251
MILES/GALLON	7.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.14
DILUTION RATIO	3.272
EXH/AIR RATIO	.959
SCF EXH/MILE	128.2
MILES/GALLON	7.8

IDLE

DWELL ANGLE	30
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	18.0
RPM	525

ROUTE	DLA
TRAFFIC	1
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1810 PPMC	5885 PPMC	.0271	5922 PPMC	.0273
HC FID					
TOTAL	3428 PPMC	11145 PPMC	.0514	11216 PPMC	.0517
OLEFINS	718 PPMC	2334 PPMC	.0108	2349 PPMC	.0108
AROMAT.	678 PPMC	2204 PPMC	.0087	2218 PPMC	.0087
PARAFS.	2032 PPMC	6607 PPMC	.0320	6649 PPMC	.0322
NOX	487 PPM	1583 PPM	.0242	1593 PPM	.0244
CO	.96 PCT	3.12 PCT	.2910	3.14 PCT	.2928
CO2	3.86 PCT	12.55 PCT	1.8381	12.63 PCT	1.8498
O2	.50 PCT	1.63 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	162
3	161
4	161
5	162
6	157
7	0
8	0

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 107-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	65.	1.010
SAMP	3215	78.	.967
CARB	3209	67.	1.003

ODOMETER	4407
TEST MILES	8.400
TEST MINUTES	26.57
CALC. MILES/HR	18.97
COUNT RATIO	1.002
AVE. COUNTS/MIN	275.1
CUB. FT./COUNT	.360
SCF AIR/MILE	132.2

LICENSE NO.	16M400
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	5/ 9/67
TIME	11.15
GVW, LB	19500
LOAD, LB	5675
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.3

AMBIENT CONDITIONS

TEMP.	50 F
PRESSURE	28.91 IN.
HUMIDITY	61 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.275
MILES/GALLON	7.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.14
DILUTION RATIO	3.275
EXH/AIR RATIO	.959
SCF EXH/MILE	126.9
MILES/GALLON	7.7

IDLE

DWELL ANGLE	30
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	18.0
RPM	525

ROUTE	DLA
TRAFFIC	2

RPM/MPH

HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2020 PPMC	6616 PPMC	.0302	6616 PPMC	.0302
HC FID					
TOTAL	3734 PPMC	12230 PPMC	.0558	12230 PPMC	.0558
OLEFINS	768 PPMC	2515 PPMC	.0115	2515 PPMC	.0115
AROMAT.	674 PPMC	2208 PPMC	.0084	2208 PPMC	.0084
PARAFS.	2292 PPMC	7507 PPMC	.0359	7507 PPMC	.0359
NOX	473 PPM	1549 PPM	.0235	1549 PPM	.0235
CO	.98 PCT	3.21 PCT	.2961	3.21 PCT	.2961
CO2	3.91 PCT	12.81 PCT	1.8558	12.81 PCT	1.8558
O2	.48 PCT	1.57 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	162
3	161
4	161
5	162
6	157
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.227 IS LOWER THAN 3.275 FROM NITROGEN COUNTS

PURLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 108-4

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	2
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	82.	.954
SAMP	2266	98.	.905
CARB	2266	74.	.980

ODOMETER	8492
TEST MILES	8.400
TEST MINUTES	25.10
CALC. MILES/HR	20.08
COUNT RATIO	1.000
AVE. COUNTS/MIN	272.3
CUB. FT./COUNT	.364
SCF AIR/MILE	93.7

LICENSE NO.	16M370
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	4.57/ .00
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	5/16/67
TIME	10.15
GVW, LB	7500
LOAD, LB	1500
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.0

AMBIENT CONDITIONS	
TEMP.	55 F
PRESSURE	29.37 IN.
HUMIDITY	43 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.860
MILES/GALLON	10.7

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.09
DILUTION RATIO	2.860
EXH/AIR RATIO	.960
SCF EXH/MILE	90.0
MILES/GALLON	10.7

IDLE	
DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.7
MAN. VAC.	19.0
RPM	500

ROUTE	DLA
TRAFFIC	1
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2520 PPMC	7208 PPMC	.0233	7208 PPMC	.0233
HC FID					
TOTAL	4572 PPMC	13077 PPMC	.0423	13077 PPMC	.0423
OLEFINS	573 PPMC	1639 PPMC	.0053	1639 PPMC	.0053
AROMAT.	333 PPMC	952 PPMC	.0014	952 PPMC	.0014
PARAFS.	3666 PPMC	10485 PPMC	.0356	10485 PPMC	.0356
NOX	433 PPM	1238 PPM	.0133	1238 PPM	.0133
CO	1.17 PCT	3.35 PCT	.2190	3.35 PCT	.2190
CO2	4.49 PCT	12.84 PCT	1.3203	12.84 PCT	1.3203
O2	.65 PCT	1.86 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	163
3	163
4	166
5	165
6	163
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.795 IS LOWER THAN 2.860 FROM NITROGEN COUNTS

B-115

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 108-5

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	75.	.977
SAMP	2279	92.	.923
CARB	2268	77.	.970

ODOMETER	8503
TEST MILES	8.400
TEST MINUTES	23.36
CALC. MILES/HR	21.58
COUNT RATIO	1.005
AVE. COUNTS/MIN	272.3
CUR. FT./COUNT	.364
SCF AIR/MILE	92.9

LICENSE NO.	16M370
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	4.57/ .00
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	5/16/67
TIME	1.05
GVW. LB	7500
LOAD. LB	1500
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK. SQ. IN.	4.9
PCV. CFM	2.0

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.37 IN.
HUMIDITY	37 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.857
MILES/GALLON	10.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.02
DILUTION RATIO	2.857
EXH/AIR RATIO	.962
SCF EXH/MILE	89.3
MILES/GALLON	10.6

IDLE

DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.7
MAN. VAC.	19.0
RPM	500

ROUTE	DLA
TRAFFIC	1

RPM/MPH

HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2370 PPMC	6771 PPMC	.0217	6771 PPMC	.0217
HC FID					
TOTAL	4466 PPMC	12759 PPMC	.0410	12759 PPMC	.0410
OLEFINS	680 PPMC	1943 PPMC	.0062	1943 PPMC	.0062
AROMAT.	320 PPMC	914 PPMC	.0014	914 PPMC	.0014
PARAFS.	3466 PPMC	9902 PPMC	.0334	9902 PPMC	.0334
NOX	460 PPM	1314 PPM	.0140	1314 PPM	.0140
CO	1.25 PCT	3.57 PCT	.2319	3.57 PCT	.2319
CO2	4.52 PCT	12.91 PCT	1.3174	12.91 PCT	1.3174
O2	.55 PCT	1.57 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	163
2	163
3	163
4	166
5	165
6	163
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.752 IS LOWER THAN 2.857 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 109-3

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	8000	89.	.932
SAMP	3816	100.	.900
CARB	3809	88.	.935

ODOMETER	40617
TEST MILES	9.140
TEST MINUTES	26.67
CALC. MILES/HR	20.56
COUNT RATIO	1.002
AVE. COUNTS/MIN	275.0
CUB. FT./COUNT	.360
SCF AIR/MILE	136.9

LICENSE NO.	900203
MODEL YEAR	1962
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.14/8.81
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	5/16/67
TIME	2.00
GVW, LB	21000
LOAD, LB	6550
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.37 IN.
HUMIDITY	37 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.173
MILES/GALLON	7.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.29
DILUTION RATIO	3.178
EXH/AIR RATIO	.956
SCF EXH/MILE	130.9
MILES/GALLON	7.8

IDLE

DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.5
MAN. VAC.	18.5
RPM	525

ROUTE	DLA
TRAFFIC	2

RPM/MPH

HIGH GEAR	53.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1310 PPMC	4156 PPMC	.0196	4163 PPMC	.0196
HC FID					
TOTAL	2533 PPMC	8036 PPMC	.0378	8050 PPMC	.0379
OLEFINS	400 PPMC	1269 PPMC	.0060	1271 PPMC	.0060
AROMAT.	267 PPMC	847 PPMC	.0026	849 PPMC	.0026
PARAFS.	1866 PPMC	5920 PPMC	.0292	5930 PPMC	.0293
NOX	359 PPM	1139 PPM	.0178	1141 PPM	.0178
CO	.87 PCT	2.76 PCT	.2626	2.76 PCT	.2630
CO2	4.05 PCT	12.85 PCT	1.9207	12.87 PCT	1.9239
O2	.32 PCT	1.02 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	147
2	131
3	136
4	140
5	139
6	132
7	148
8	140

1093 RUN IN 4TH TOP GEAR.

LM-8

8M 8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 109-4

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG	CORR.
NITR	8000	76.	.973
SAMP	3872	82.	.954
CARB	3871	85.	.945

ODOMETER	40639
TEST MILES	9.140
TEST MINUTES	26.98
CALC. MILES/HR	20.33
COUNT RATIO	1.000
AVE. COUNTS/MIN	275.0
CUB. FT./COUNT	.360
SCF AIR/MILE	140.4

LICENSE NO.	900203
MODEL YEAR	1962
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.14/8.81
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	5/16/67
TIME	4.00
GVW, LB	21000
LOAD, LB	6550
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	61 F
PRESSURE	29.35 IN.
HUMIDITY	36 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.108
MILES/GALLON	7.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.26
DILUTION RATIO	3.190
EXH/AIR RATIO	.957
SCF EXH/MILE	134.3
MILES/GALLON	7.6

IDLE

DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.5
MAN. VAC.	18.5
RPM	525

ROUTE	DLA
TRAFFIC	3
RPM/MPH	
HIGH GEAR	53.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1392 PPMC	4326 PPMC	.0209	4440 PPMC	.0214
HC FID					
TOTAL	2572 PPMC	7994 PPMC	.0386	8204 PPMC	.0396
OLEFINS	495 PPMC	1538 PPMC	.0074	1579 PPMC	.0076
AROMAT.	201 PPMC	625 PPMC	.0016	641 PPMC	.0017
PARAFS.	1876 PPMC	5830 PPMC	.0295	5984 PPMC	.0303
NOX	327 PPM	1016 PPM	.0163	1043 PPM	.0167
CO	.89 PCT	2.77 PCT	.2700	2.84 PCT	.2771
CO2	4.02 PCT	12.49 PCT	1.9162	12.82 PCT	1.9666
O2	.30 PCT	.93 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	147
2	131
3	136
4	140
5	139
6	132
7	148
8	140

1094 RUN IN 4TH TOP GEAR.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 110-1

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	3
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	69.	.997
SAMP	7054	95.	.914
CARB	7058	110.	.871

ODOMETER	35174
TEST MILES	9.140
TEST MINUTES	27.15
CALC. MILES/HR	20.20
COUNT RATIO	.999
AVE. COUNTS/MIN	275.1
CUB. FT./COUNT	.360
SCF AIR/MILE	234.6

LICENSE NO.	15M673
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	477
TRANSMISSION	5M/
AXLE RATIO	7.20/ .00
CARB. NO.	F12
DIST. NO.	F12
AIR CL. NO.	F4

DATE	5/17/67
TIME	10.30
GVW, LB	41000
LOAD, LB	12000
PER CENT LOAD	50
MAXIMUM BHP	222
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	65 F
PRESSURE	29.29 IN.
HUMIDITY	47 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.546
MILES/GALLON	4.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.03
DILUTION RATIO	2.620
EXH/AIR RATIO	.962
SCF EXH/MILE	225.6
MILES/GALLON	4.4

IDLE

DWELL ANGLE	27
IGN. TIMING	-8.0
A/F RATIO	13.3
MAN. VAC.	20.0
RPM	550

ROUTE	DLA
TRAFFIC	2

RPM/MPH

HIGH GEAR	48.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1690 PPMC	4302 PPMC	.0349	4427 PPMC	.0359
HC FID					
TOTAL	3320 PPMC	8451 PPMC	.0686	8697 PPMC	.0706
OLEFINS	542 PPMC	1380 PPMC	.0112	1420 PPMC	.0115
AROMAT.	271 PPMC	690 PPMC	.0031	710 PPMC	.0032
PARAFS.	2507 PPMC	6382 PPMC	.0543	6568 PPMC	.0559
NOX	473 PPM	1204 PPM	.0324	1239 PPM	.0334
CO	1.31 PCT	3.33 PCT	.5469	3.43 PCT	.5629
CO2	4.75 PCT	12.09 PCT	3.1158	12.44 PCT	3.2066
O2	.51 PCT	1.30 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	159
2	150
3	152
4	153
5	144
6	151
7	150
8	156

6/1-8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 110-2

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	70.	.993
SAMP	6952	75.	.977
CARB	6949	108.	.877

ODOMETER	35197
TEST MILES	9.140
TEST MINUTES	26.26
CALC. MILES/HR	20.88
COUNT RATIO	1.000
AVE. COUNTS/MIN	275.1
CUB. FT./COUNT	.360
SCF AIR/MILE	231.8

LICENSE NO.	15M673
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	477
TRANSMISSION	5M/
AXLE RATIO	7.20/ .00
CARB. NO.	F12
DIST. NO.	F12
AIR CL. NO.	F4

DATE	5/17/67
TIME	3.00
GVW, LB	41000
LOAD, LB	12000
PER CENT LOAD	50
MAXIMUM BHP	222
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	66 F
PRESSURE	29.22 IN.
HUMIDITY	47 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.463
MILES/GALLON	4.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.06
DILUTION RATIO	2.499
EXH/AIR RATIO	.961
SCF EXH/MILE	222.8
MILES/GALLON	4.5

IDLE

DWELL ANGLE	27
IGN. TIMING	-8.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	530

ROUTE	DLA
TRAFFIC	2

RPM/MPH

HIGH GEAR	48.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1670 PPMC	4113 PPMC	.0329	4174 PPMC	.0334
HC FID					
TOTAL	3243 PPMC	7987 PPMC	.0640	8105 PPMC	.0649
OLEFINS	443 PPMC	1091 PPMC	.0087	1107 PPMC	.0089
AROMAT.	214 PPMC	527 PPMC	.0017	535 PPMC	.0018
PARAFS.	2586 PPMC	6369 PPMC	.0535	6463 PPMC	.0543
NOX	475 PPM	1170 PPM	.0311	1187 PPM	.0316
CO	1.34 PCT	3.30 PCT	.5345	3.35 PCT	.5424
CO2	5.00 PCT	12.31 PCT	3.1333	12.50 PCT	3.1795
O2	.60 PCT	1.48 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	159
2	150
3	152
4	153
5	144
6	151
7	150
8	156

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 111-1

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	8500	75.	.977
SAMP	5309	79.	.964
CARB	5312	98.	.905

ODOMETER	5099
TEST MILES	9.140
TEST MINUTES	27.40
CALC. MILES/HR	20.01
COUNT RATIO	.999
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	187.2

LICENSE NO.	15M791
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	6.50/ .00
CARB. NO.	F10
DIST. NO.	F10
AIR CL. NO.	F4

DATE	5/22/67
TIME	11.00
GVW, LB	25500
LOAD, LB	7250
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	51 F
PRESSURE	29.55 IN.
HUMIDITY	44 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.623
MILES/GALLON	5.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.37
DILUTION RATIO	2.623
EXH/AIR RATIO	.955
SCF EXH/MILE	178.7
MILES/GALLON	5.5

IDLE

DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	12.9
MAN. VAC.	19.4
RPM	550

ROUTE	DLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	56.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3040 PPMC	7973 PPMC	.0512	7973 PPMC	.0512
HC FID					
TOTAL	4803 PPMC	12597 PPMC	.0810	12597 PPMC	.0810
OLEFINS	779 PPMC	2043 PPMC	.0131	2043 PPMC	.0131
AROMAT.	130 PPMC	341 PPMC	-.0010	341 PPMC	-.0010
PARAFS.	3894 PPMC	10213 PPMC	.0688	10213 PPMC	.0688
NOX	747 PPM	1959 PPM	.0418	1959 PPM	.0418
CO	.99 PCT	2.60 PCT	.3373	2.60 PCT	.3373
CO2	5.00 PCT	13.11 PCT	2.6767	13.11 PCT	2.6767
O2	.53 PCT	1.39 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	148
2	156
3	154
4	149
5	148
6	153
7	154
8	147

DIL. RATIO FROM CO/CO2 CALCN. = 2.599 IS LOWER THAN 2.623 FROM NITROGEN COUNTS

121-8

8-122

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 111-2

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	9000	70.	.993
SAMP	5339	88.	.935
CARB	5334	100.	.900

ODOMETER	5122
TEST MILES	9.140
TEST MINUTES	27.29
CALC. MILES/HR	20.10
COUNT RATIO	1.001
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	186.4

LICENSE NO.	15M791
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	6.50/ .00
CARB. NO.	F10
DIST. NO.	F10
AIR CL. NO.	F4

DATE	5/22/67
TIME	2.00
GVW, LB	25500
LOAD, LB	7250
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	55 F
PRESSURE	29.49 IN.
HUMIDITY	38 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.790
MILES/GALLON	5.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.43
DILUTION RATIO	2.790
EXH/AIR RATIO	.953
SCF EXH/MILE	177.7
MILES/GALLON	5.6

IDLE

DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	12.9
MAN. VAC.	19.0
RPM	550

ROUTE	DLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	56.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2745 PPMC	7659 PPMC	.0489	7659 PPMC	.0489
HC FID					
TOTAL	4608 PPMC	12857 PPMC	.0822	12857 PPMC	.0822
OLEFINS	714 PPMC	1992 PPMC	.0127	1992 PPMC	.0127
AROMAT.	130 PPMC	363 PPMC	-.0010	363 PPMC	-.0010
PARAFS.	3764 PPMC	10502 PPMC	.0704	10502 PPMC	.0704
NOX	653 PPM	1822 PPM	.0387	1822 PPM	.0387
CO	.87 PCT	2.43 PCT	.3136	2.43 PCT	.3136
CO2	4.69 PCT	13.09 PCT	2.6563	13.09 PCT	2.6563
O2	.42 PCT	1.17 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	148
2	156
3	154
4	149
5	148
6	153
7	154
8	147

DIL. RATIO FROM CO/CO2 CALCN. = 2.789 IS LOWER THAN 2.790 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 112-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	6
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	68.	1.000
SAMP	3430	73.	.983
CARB	3431	85.	.945

ODOMETER	39167
TEST MILES	8.400
TEST MINUTES	25.95
CALC. MILES/HR	19.42
COUNT RATIO	1.000
AVE. COUNTS/MIN	275.1
CUB. FT./COUNT	.360
SCF AIR/MILE	135.3

LICENSE NO.	5220CD
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	4M/
AXLE RATIO	6.50/8.85
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	5/23/67
TIME	3.00
GVW, LB	19500
LOAD, LB	4000
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	57 F
PRESSURE	29.34 IN.
HUMIDITY	38 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.076
MILES/GALLON	7.4

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.89
DILUTION RATIO	3.076
EXH/AIR RATIO	.965
SCF EXH/MILE	130.5
MILES/GALLON	7.4

IDLE

DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	13.1
MAN. VAC.	17.5
RPM	550

ROUTE	DLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	51.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1590 PPMC	4890 PPMC	.0230	4890 PPMC	.0230
HC FID					
TOTAL	3203 PPMC	9852 PPMC	.0462	9852 PPMC	.0462
OLEFINS	973 PPMC	2993 PPMC	.0140	2993 PPMC	.0140
AROMAT.	976 PPMC	3002 PPMC	.0132	3002 PPMC	.0132
PARAFS.	1254 PPMC	3857 PPMC	.0190	3857 PPMC	.0190
NOX	527 PPM	1621 PPM	.0253	1621 PPM	.0253
CO	1.27 PCT	3.91 PCT	.3706	3.91 PCT	.3706
CO2	4.10 PCT	12.61 PCT	1.8799	12.61 PCT	1.8799
O2	.47 PCT	1.45 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	167
2	162
3	160
4	165
5	158
6	163
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.980 IS LOWER THAN 3.076 FROM NITROGEN COUNTS

8-/23

B-134

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 112-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	6
TRUCK NUMBER	1
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	74.	.980
SAMP	3534	87.	.938
CARB	3535	90.	.929

ODOMETER	39189
TEST MILES	8.400
TEST MINUTES	25.76
CALC. MILES/HR	19.57
COUNT RATIO	1.000
AVE. COUNTS/MIN	275.1
CUR. FT./COUNT	.360
SCF AIR/MILE	136.3

LICENSE NO.	5220CD
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	4M/
AXLE RATIO	6.50/8.85
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	5/24/67
TIME	10.00
GVW, LB	19500
LOAD, LB	4000
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.30 IN.
HUMIDITY	62 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.068
MILES/GALLON	7.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.90
DILUTION RATIO	3.068
EXH/AIR RATIO	.964
SCF EXH/MILE	131.4
MILES/GALLON	7.3

IDLE

DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	13.1
MAN. VAC.	17.0
RPM	525

ROUTE	DLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	51.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1760 PPMC	5400 PPMC	.0255	5400 PPMC	.0255
HC FID					
TOTAL	3356 PPMC	10298 PPMC	.0487	10298 PPMC	.0487
OLEFINS	1049 PPMC	3219 PPMC	.0152	3219 PPMC	.0152
AROMAT.	996 PPMC	3056 PPMC	.0135	3056 PPMC	.0135
PARAFS.	1311 PPMC	4023 PPMC	.0199	4023 PPMC	.0199
NOX	473 PPM	1451 PPM	.0228	1451 PPM	.0228
CO	1.26 PCT	3.87 PCT	.3693	3.87 PCT	.3693
CO2	4.10 PCT	12.58 PCT	1.8882	12.58 PCT	1.8882
O2	.47 PCT	1.44 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	167
2	162
3	160
4	165
5	158
6	163
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.984 IS LOWER THAN 3.068 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 113-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	4000	72.	.987
SAMP	3046	84.	.965
CARB	3043	88.	.935

ODOMETER	40086
TEST MILES	8.400
TEST MINUTES	27.82
CALC. MILES/HR	18.12
COUNT RATIO	1.001
AVE. COUNTS/MIN	271.7
CUB. FT./COUNT	.364
SCF AIR/MILE	119.6

LICENSE NO.	7034CN
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	4M/
AXLE RATIO	5.87/ .00
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	5/25/67
TIME	10.00
GVW, LB	10000
LOAD, LB	2420
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	6.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	66 F
PRESSURE	29.32 IN.
HUMIDITY	52 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.367
MILES/GALLON	8.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.97
DILUTION RATIO	2.367
EXH/AIR RATIO	.963
SCF EXH/MILE	115.1
MILES/GALLON	8.2

IDLE

DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	20.0
RPM	560

ROUTE	DLA
TRAFFIC	2
RPM/MPH	
HIGH GEAR	57.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2800 PPMC	6628 PPMC	.0274	6628 PPMC	.0274
HC FID					
TOTAL	4920 PPMC	11646 PPMC	.0482	11646 PPMC	.0482
OLEFINS	1348 PPMC	3191 PPMC	.0132	3191 PPMC	.0132
AROMAT.	1334 PPMC	3158 PPMC	.0120	3158 PPMC	.0120
PARAFS.	2238 PPMC	5297 PPMC	.0230	5297 PPMC	.0230
NOX	720 PPM	1704 PPM	.0234	1704 PPM	.0234
CO	1.58 PCT	3.74 PCT	.3131	3.74 PCT	.3131
CO2	5.46 PCT	12.92 PCT	1.6997	12.92 PCT	1.6997
O2	.76 PCT	1.80 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	168
3	165
4	163
5	163
6	165
7	168
8	160

DIL. RATIO FROM CO/CO2 CALCN. = 2.262 IS LOWER THAN 2.367 FROM NITROGEN COUNTS

1131 NO PCV.

8/25

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 113-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	5000	87.	.938
SAMP	3088	91.	.926
CARB	3087	94.	.917

ODOMETER	40111
TEST MILES	8.400
TEST MINUTES	27.88
CALC. MILES/HR	18.08
COUNT RATIO	1.000
AVE. COUNTS/MIN	271.7
CUB. FT./COUNT	.364
SCF AIR/MILE	118.7

LICENSE NO.	7034CN
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	4M/
AXLE RATIO	5.87/ .00
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	5/25/67
TIME	2.30
GVW, LB	10000
LOAD, LB	2420
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	6.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	75 F
PRESSURE	29.31 IN.
HUMIDITY	43 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.641
MILES/GALLON	8.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.84
DILUTION RATIO	2.641
EXH/AIR RATIO	.966
SCF EXH/MILE	114.7
MILES/GALLON	8.4

IDLE

DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	20.0
RPM	560

ROUTE	DLA
TRAFFIC	3
RPM/MPH	
HIGH GEAR	57.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2490 PPMC	6575 PPMC	.0271	6575 PPMC	.0271
HC FID					
TOTAL	4623 PPMC	12207 PPMC	.0503	12207 PPMC	.0503
OLEFINS	1219 PPMC	3219 PPMC	.0133	3219 PPMC	.0133
AROMAT.	1180 PPMC	3116 PPMC	.0117	3116 PPMC	.0117
PARAFS.	2224 PPMC	5873 PPMC	.0254	5873 PPMC	.0254
NOX	573 PPM	1513 PPM	.0207	1513 PPM	.0207
CO	1.50 PCT	3.96 PCT	.3302	3.96 PCT	.3302
CO2	4.68 PCT	12.36 PCT	1.6185	12.36 PCT	1.6185
O2	.52 PCT	1.37 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	168
3	165
4	163
5	163
6	165
7	168
8	160

DIL. RATIO FROM CO/CO2 CALCN. = 2.596 IS LOWER THAN 2.641 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 114-1

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	81.	.957
SAMP	2507	103.	.891
CARB	2504	87.	.938

ODOMETER	5481
TEST MILES	8.400
TEST MINUTES	27.05
CALC. MILES/HR	18.63
COUNT RATIO	1.001
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	98.6

LICENSE NO.	15M787
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	300
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F5
DIST. NO.	F5
AIR CL. NO.	F1

DATE	5/26/67
TIME	11.00
GVW, LB	7500
LOAD, LB	1775
PER CENT LOAD	50
MAXIMUM BHP	150
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.37 IN.
HUMIDITY	37 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.714
MILES/GALLON	10.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.04
DILUTION RATIO	2.714
EXH/AIR RATIO	.961
SCF EXH/MILE	94.8
MILES/GALLON	10.3

IDLE

DWELL ANGLE	37
IGN. TIMING	-6.0
A/F RATIO	12.3
MAN. VAC.	18.5
RPM	525

ROUTE	DLA
TRAFFIC	1
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2060 PPMC	5591 PPMC	.0191	5591 PPMC	.0191
HC FID					
TOTAL	3841 PPMC	10425 PPMC	.0355	10425 PPMC	.0355
OLEFINS	1219 PPMC	3309 PPMC	.0113	3309 PPMC	.0113
AROMAT.	1075 PPMC	2918 PPMC	.0093	2918 PPMC	.0093
PARAFS.	1547 PPMC	4199 PPMC	.0150	4199 PPMC	.0150
NOX	432 PPM	1173 PPM	.0133	1173 PPM	.0133
CO	1.27 PCT	3.45 PCT	.2376	3.45 PCT	.2376
CO2	4.67 PCT	12.68 PCT	1.3728	12.68 PCT	1.3728
O2	.48 PCT	1.30 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	169
2	166
3	182
4	166
5	167
6	162
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.670 IS LOWER THAN 2.714 FROM NITROGEN COUNTS

B-137

8.128

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 114-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	87.	.938
SAMP	2623	97.	.908
CARB	2632	87.	.938

ODOMETER	5505
TEST MILES	8.400
TEST MINUTES	26.92
CALC. MILES/HR	18.72
COUNT RATIO	.997
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	103.6

LICENSE NO.	15M787
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	300
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F5
DIST. NO.	F5
AIR CL. NO.	F1

DATE	5/26/67
TIME	3.00
GVW, LB	7500
LOAD, LB	1775
PER CENT LOAD	50
MAXIMUM BHP	150
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.34 IN.
HUMIDITY	37 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.376
MILES/GALLON	10.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.95
DILUTION RATIO	2.593
EXH/AIR RATIO	.963
SCF EXH/MILE	99.8
MILES/GALLON	9.9

IDLE

DWELL ANGLE	37
IGN. TIMING	-6.0
A/F RATIO	12.3
MAN. VAC.	18.5
RPM	525

ROUTE	DLA
TRAFFIC	1
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2060 PPMC	5306 PPMC	.0190	5342 PPMC	.0192
HC FID					
TOTAL	3941 PPMC	10150 PPMC	.0364	10219 PPMC	.0367
OLEFINS	1239 PPMC	3191 PPMC	.0114	3213 PPMC	.0115
AROMAT.	1002 PPMC	2581 PPMC	.0085	2598 PPMC	.0086
PARAFS.	1700 PPMC	4378 PPMC	.0165	4408 PPMC	.0166
NOX	468 PPM	1205 PPM	.0144	1214 PPM	.0145
CO	1.40 PCT	3.61 PCT	.2616	3.63 PCT	.2633
CO2	4.75 PCT	12.23 PCT	1.3943	12.32 PCT	1.4037
O2	.59 PCT	1.52 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	169
2	166
3	182
4	166
5	167
6	162
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 115-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5500	82.	.954
SAMP	3121	81.	.957
CAPB	3123	80.	.960

ODOMETER	21563
TEST MILES	8.400
TEST MINUTES	25.97
CALC. MILES/HR	19.41
COUNT RATIO	.999
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	125.3

LICENSE NO.	16M851
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	7.17/9.77
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C1

DATE	5/29/67
TIME	10.00
GVW, LB	16000
LOAD, LB	4850
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	65 F
PRESSURE	29.23 IN.
HUMIDITY	41 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.756
MILES/GALLON	7.4

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	11.95
DILUTION RATIO	2.756
EXH/AIR RATIO	.988
SCF EXH/MILE	123.7
MILES/GALLON	7.4

IDLE

DWELL ANGLE	35
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	17.0
RPM	500

ROUTE	DLA-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	62.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1740 PPMC	4796 PPMC	.0213	4796 PPMC	.0213
HC FID					
TOTAL	3359 PPMC	9259 PPMC	.0412	9259 PPMC	.0412
OLEFINS	959 PPMC	2643 PPMC	.0118	2643 PPMC	.0118
AROMAT.	1000 PPMC	2756 PPMC	.0114	2756 PPMC	.0114
PARAFS.	1400 PPMC	3859 PPMC	.0180	3859 PPMC	.0180
NOX	333 PPM	918 PPM	.0136	918 PPM	.0136
CO	2.28 PCT	6.28 PCT	.5653	6.28 PCT	.5653
CO2	4.00 PCT	11.03 PCT	1.5581	11.03 PCT	1.5581
O2	.27 PCT	.74 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	175
3	181
4	183
5	173
6	154
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.682 IS LOWER THAN 2.756 FROM NITROGEN COUNTS

8-129

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 115-3

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5500	82.	.954
SAMP	3019	81.	.957
CARB	3022	74.	.980

ODOMETER	21781
TEST MILES	8.400
TEST MINUTES	26.57
CALC. MILES/HR	18.97
COUNT RATIO	.999
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	124.9

LICENSE NO.	16M851
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	7.17/9.77
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C1

DATE	5/31/67
TIME	9.55
GVW, LB	16000
LOAD, LB	4850
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	62 F
PRESSURE	29.48 IN.
HUMIDITY	38 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.816
MILES/GALLON	7.7

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.08
DILUTION RATIO	2.816
EXH/AIR RATIO	.984
SCF EXH/MILE	123.0
MILES/GALLON	7.7

IDLE

DWELL ANGLE	35
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	17.0
RPM	500

ROUTE	DLA
TRAFFIC	1
RPM/MPH	
HIGH GEAR	62.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1695 PPMC	4773 PPMC	.0211	4773 PPMC	.0211
HC FID					
TOTAL	3295 PPMC	9278 PPMC	.0410	9278 PPMC	.0410
OLEFINS	923 PPMC	2599 PPMC	.0115	2599 PPMC	.0115
AROMAT.	1054 PPMC	2968 PPMC	.0123	2968 PPMC	.0123
PARAFS.	1318 PPMC	3711 PPMC	.0172	3711 PPMC	.0172
NOX	316 PPM	890 PPM	.0131	890 PPM	.0131
CO	2.08 PCT	5.86 PCT	.5235	5.86 PCT	.5235
CO2	3.92 PCT	11.04 PCT	1.5502	11.04 PCT	1.5502
O2	.32 PCT	.90 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	175
3	181
4	183
5	173
6	154
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.788 IS LOWER THAN 2.816 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 116-4

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	113.	.863
SAMP	6581	128.	.824
CARB	6574	117.	.852

ODOMETER	51933
TEST MILES	9.140
TEST MINUTES	29.04
CALC. MILES/HR	18.88
COUNT RATIO	1.001
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	214.9

LICENSE NO.	12M917
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	391
TRANSMISSION	5M/
AXLE RATIO	6.65/9.13
CARB. NO.	F11
DIST. NO.	F11
AIR CL. NO.	F4

DATE	6/ 5/67
TIME	2.55
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	2.1

AMBIENT CONDITIONS

TEMP.	81 F
PRESSURE	29.42 IN.
HUMIDITY	44 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.592
MILES/GALLON	4.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.96
DILUTION RATIO	2.592
EXH/AIR RATIO	.963
SCF EXH/MILE	207.0
MILES/GALLON	4.7

IDLE

DWELL ANGLE	25
IGN. TIMING	-8.0
A/F RATIO	12.5
MAN. VAC.	17.0
RPM	560

ROUTE	DLA-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	55.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3190 PPMC	8268 PPMC	.0615	8268 PPMC	.0615
HC FID					
TOTAL	4839 PPMC	12542 PPMC	.0934	12542 PPMC	.0934
OLEFINS	818 PPMC	2120 PPMC	.0158	2120 PPMC	.0158
AROMAT.	1431 PPMC	3709 PPMC	.0252	3709 PPMC	.0252
PARAFS.	2590 PPMC	6713 PPMC	.0524	6713 PPMC	.0524
NOx	553 PPM	1433 PPM	.0354	1433 PPM	.0354
CO	1.40 PCT	3.63 PCT	.5460	3.63 PCT	.5460
CO2	4.79 PCT	12.42 PCT	2.9352	12.42 PCT	2.9352
O2	.47 PCT	1.22 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	162
2	160
3	161
4	162
5	165
6	160
7	155
8	157

DIL. RATIO FROM CO/CO2 CALCN. = 2.575 IS LOWER THAN 2.592 FROM NITROGEN COUNTS

8-131

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 116-5

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	86.	.941
SAMP	6610	109.	.874
CARB	6616	132.	.814

ODOMETER	52167
TEST MILES	9.140
TEST MINUTES	27.16
CALC. MILES/HR	20.19
COUNT RATIO	.999
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	205.6

LICENSE NO.	12M917
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	391
TRANSMISSION	5M/
AXLE RATIO	6.65/9.13
CARB. NO.	F11
DIST. NO.	F11
AIR CL. NO.	F4

DATE	6/ 6/67
TIME	9.50
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	2.1

AMBIENT CONDITIONS

TEMP.	73 F
PRESSURE	29.34 IN.
HUMIDITY	63 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.629
MILES/GALLON	4.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.07
DILUTION RATIO	2.629
EXH/AIR RATIO	.961
SCF EXH/MILE	197.6
MILES/GALLON	4.9

IDLE

DWELL ANGLE	25
IGN. TIMING	-8.0
A/F RATIO	12.5
MAN. VAC.	17.0
RPM	550

ROUTE	DLA-4
TRAFFIC	2

RPM/MPH

HIGH GEAR	55.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3340 PPMC	8783 PPMC	.0624	8783 PPMC	.0624
HC FID					
TOTAL	5179 PPMC	13618 PPMC	.0968	13618 PPMC	.0968
OLEFINS	954 PPMC	2509 PPMC	.0178	2509 PPMC	.0178
AROMAT.	1635 PPMC	4299 PPMC	.0282	4299 PPMC	.0282
PARAFS.	2590 PPMC	6810 PPMC	.0508	6810 PPMC	.0508
NOX	613 PPM	1612 PPM	.0380	1612 PPM	.0380
CO	1.28 PCT	3.37 PCT	.4834	3.37 PCT	.4834
CO2	4.80 PCT	12.62 PCT	2.8482	12.62 PCT	2.8482
O2	.43 PCT	1.13 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	162
2	160
3	161
4	162
5	165
6	160
7	155
8	157

DIL. RATIO FROM CO/CO2 CALCN. = 2.605 IS LOWER THAN 2.629 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 117-1

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	93.	.920
SAMP	6570	106.	.882
CAPR	6573	115.	.858

ODOMETER	12371
TEST MILES	9.140
TEST MINUTES	26.57
CALC. MILES/HR	20.64
COUNT RATIO	1.000
AVE. COUNTS/MIN	276.5
CUB. FT./COUNT	.358
SCF AIR/MILE	210.7

LICENSE NO.	4267CK
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	6.71/9.14
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	6/ 7/67
TIME	1.50
GVW, LB	32000
LOAD, LB	10000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	80 F
PRESSURE	29.19 IN.
HUMIDITY	62 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.587
MILES/GALLON	5.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.92
DILUTION RATIO	2.587
EXH/AIR RATIO	.944
SCF EXH/MILE	199.0
MILES/GALLON	5.5

IDLE

DWELL ANGLE	32
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	19.0
RPM	500

ROUTE	DLA-4
TRAFFIC	1

RPM/MPH

HIGH GEAR	56.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1110 PPMC	2872 PPMC	.0205	2872 PPMC	.0205
HC FID					
TOTAL	2072 PPMC	5360 PPMC	.0384	5360 PPMC	.0384
OLEFINS	573 PPMC	1482 PPMC	.0106	1482 PPMC	.0106
AROMAT.	613 PPMC	1586 PPMC	.0106	1586 PPMC	.0106
PARAFS.	886 PPMC	2292 PPMC	.0172	2292 PPMC	.0172
NOX	793 PPM	2052 PPM	.0487	2052 PPM	.0487
CO	.57 PCT	1.47 PCT	.2133	1.47 PCT	.2133
CO2	5.20 PCT	13.45 PCT	3.0576	13.45 PCT	3.0576
O2	.61 PCT	1.58 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	154
3	162
4	150
5	155
6	144
7	158
8	151

DIL. RATIO FROM CO/CO2 CALCN. = 2.580 IS LOWER THAN 2.587 FROM NITROGEN COUNTS

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 117-2

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	98.	.905
SAMP	6559	103.	.891
CARB	6570	119.	.847

ODOMETER	12393
TEST MILES	9.140
TEST MINUTES	26.44
CALC. MILES/HR	20.74
COUNT RATIO	.998
AVE. COUNTS/MIN	276.5
CUB. FT./COUNT	.358
SCF AIR/MILE	207.9

LICENSE NO.	4267CK
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	6.71/9.14
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	6/ 8/67
TIME	10.15
GVW, LB	32000
LOAD, LB	10000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	77 F
PRESSURE	29.19 IN.
HUMIDITY	71 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.549
MILES/GALLON	5.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.03
DILUTION RATIO	2.562
EXH/AIR RATIO	.942
SCF EXH/MILE	195.9
MILES/GALLON	5.6

IDLE

DWELL ANGLE	32
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	18.0
RPM	500

ROUTE	DLA-4
TRAFFIC	1
RPM/MPH	
HIGH GEAR	56.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1052 PPMC	2682 PPMC	.0189	2695 PPMC	.0190
HC FID					
TOTAL	1961 PPMC	4999 PPMC	.0352	5025 PPMC	.0354
OLEFINS	453 PPMC	1155 PPMC	.0081	1161 PPMC	.0082
AROMAT.	699 PPMC	1782 PPMC	.0118	1791 PPMC	.0119
PARAFS.	809 PPMC	2062 PPMC	.0152	2073 PPMC	.0153
NOX	793 PPM	2022 PPM	.0473	2032 PPM	.0475
CO	.52 PCT	1.33 PCT	.1888	1.33 PCT	.1897
CO2	5.25 PCT	13.38 PCT	2.9940	13.45 PCT	3.0092
O2	.59 PCT	1.50 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	154
3	162
4	150
5	155
6	144
7	158
8	151

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 118-2

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	100.	.900
SAMP	6667	100.	.900
CARB	6685	125.	.831

ODOMETER	34825
TEST MILES	9.140
TEST MINUTES	27.10
CALC. MILES/HR	20.24
COUNT RATIO	.997
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	213.2

LICENSE NO.	5223CD
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	450
TRANSMISSION	5M/
AXLE RATIO	7.17/ .00
CARB. NO.	I4
DIST. NO.	I4
AIR CL. NO.	I3

DATE	6/ 9/67
TIME	2.40
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	1.5

AMBIENT CONDITIONS

TEMP.	80 F
PRESSURE	29.19 IN.
HUMIDITY	56 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.500
MILES/GALLON	4.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.92
DILUTION RATIO	2.500
EXH/AIR RATIO	.964
SCF EXH/MILE	205.5
MILES/GALLON	4.9

IDLE

DWELL ANGLE	30
IGN. TIMING	-5.0
A/F RATIO	12.2
MAN. VAC.	18.5
RPM	475

ROUTE	DLA-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	60.60
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	785 PPMC	1962 PPMC	.0145	1962 PPMC	.0145
HC FID					
TOTAL	1667 PPMC	4167 PPMC	.0308	4167 PPMC	.0308
OLEFINS	413 PPMC	1032 PPMC	.0076	1032 PPMC	.0076
AROMAT.	565 PPMC	1412 PPMC	.0098	1412 PPMC	.0098
PARAFS.	689 PPMC	1722 PPMC	.0134	1722 PPMC	.0134
NOX	580 PPM	1450 PPM	.0356	1450 PPM	.0356
CO	1.50 PCT	3.75 PCT	.5602	3.75 PCT	.5602
CO2	4.96 PCT	12.40 PCT	2.9103	12.40 PCT	2.9103
O2	.29 PCT	.72 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	158
3	154
4	160
5	156
6	157
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.473 IS LOWER THAN 2.500 FROM NITROGEN COUNTS

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 118-3

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	3

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	10000	88.	.935
SAMP	6778	100.	.900
CARB	6780	145.	.783

ODOMETER	34850
TEST MILES	9.140
TEST MINUTES	27.20
CALC. MILES/HR	20.16
COUNT RATIO	1.000
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	203.7

LICENSE NO.	5223CD
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	450
TRANSMISSION	5M/
AXLE RATIO	7.17/ .00
CARB. NO.	I4
DIST. NO.	I4
AIR CL. NO.	I3

DATE	6/12/67
TIME	9.32
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	1.5

AMBIENT CONDITIONS

TEMP.	79 F
PRESSURE	29.29 IN.
HUMIDITY	65 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.534
MILES/GALLON	5.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.84
DILUTION RATIO	2.534
EXH/AIR RATIO	.966
SCF EXH/MILE	196.7
MILES/GALLON	5.2

IDLE

DWELL ANGLE	30
IGN. TIMING	-5.0
A/F RATIO	12.2
MAN. VAC.	19.0
RPM	500

ROUTE	DLA-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	60.60
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	625 PPMC	1584 PPMC	.0112	1584 PPMC	.0112
HC FID					
TOTAL	1488 PPMC	3771 PPMC	.0267	3771 PPMC	.0267
OLEFINS	399 PPMC	1011 PPMC	.0071	1011 PPMC	.0071
AROMAT.	510 PPMC	1292 PPMC	.0086	1292 PPMC	.0086
PARAFS.	579 PPMC	1467 PPMC	.0109	1467 PPMC	.0109
NOX	484 PPM	1226 PPM	.0288	1226 PPM	.0288
CO	1.55 PCT	3.93 PCT	.5616	3.93 PCT	.5616
CO2	4.84 PCT	12.26 PCT	2.7554	12.26 PCT	2.7554
O2	.27 PCT	.68 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	158
3	154
4	160
5	156
6	157
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.510 IS LOWER THAN 2.534 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 119-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	84.	.948
SAMP	4249	102.	.894
CARB	4254	118.	.850

ODOMETER	28795
TEST MILES	8.400
TEST MINUTES	26.66
CALC. MILES/HR	18.90
COUNT RATIO	.999
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	151.0

LICENSE NO.	7052CN
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	6/12/67
TIME	2.10
GVW. LB	20000
LOAD. LB	6000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK. SQ. IN.	.0
PCV. CFM	2.7

AMBIENT CONDITIONS

TEMP.	85 F
PRESSURE	29.27 IN.
HUMIDITY	51 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.747
MILES/GALLON	7.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.42
DILUTION RATIO	2.890
EXH/AIR RATIO	.954
SCF EXH/MILE	144.0
MILES/GALLON	6.9

IDLE

DWELL ANGLE	29
IGN. TIMING	-12.0
A/F RATIO	12.9
MAN. VAC.	18.0
RPM	500

ROUTE	DLA-3
TRAFFIC	2

RPM/MPH

HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2870 PPMC	7883 PPMC	.0408	8294 PPMC	.0430
HC FID					
TOTAL	4547 PPMC	12490 PPMC	.0647	13140 PPMC	.0681
OLEFINS	826 PPMC	2269 PPMC	.0117	2387 PPMC	.0124
AROMAT.	1613 PPMC	4431 PPMC	.0215	4661 PPMC	.0226
PARAFS.	2108 PPMC	5790 PPMC	.0315	6092 PPMC	.0331
NOX	840 PPM	2307 PPM	.0397	2427 PPM	.0417
CO	.85 PCT	2.33 PCT	.2445	2.46 PCT	.2572
CO2	4.52 PCT	12.42 PCT	2.0425	13.06 PCT	2.1489
O2	.76 PCT	2.09 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	155
3	151
4	143
5	142
6	158
7	155
8	145

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 119-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	7000	100.	.900
SAMP	4027	102.	.894
CARB	4028	109.	.874

ODOMETER	28821
TEST MILES	8.400
TEST MINUTES	25.60
CALC. MILES/HR	19.69
COUNT RATIO	1.000
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	147.5

LICENSE NO.	7052CN
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	6/13/67
TIME	10.00
GVW, LB	20000
LOAD, LB	6000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.7

AMBIENT CONDITIONS

TEMP.	82 F
PRESSURE	29.35 IN.
HUMIDITY	56 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.749
MILES/GALLON	7.8

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.52
DILUTION RATIO	3.009
EXH/AIR RATIO	.952
SCF EXH/MILE	140.4
MILES/GALLON	7.1

IDLE

DWELL ANGLE	29
IGN. TIMING	-12.0
A/F RATIO	12.9
MAN. VAC.	18.0
RPM	475

ROUTE	DLA-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3090 PPMC	8496 PPMC	.0429	9298 PPMC	.0469
HC FID					
TOTAL	4946 PPMC	13599 PPMC	.0687	14883 PPMC	.0751
OLEFINS	881 PPMC	2422 PPMC	.0122	2651 PPMC	.0134
AROMAT.	1504 PPMC	4135 PPMC	.0191	4526 PPMC	.0210
PARAFS.	2561 PPMC	7041 PPMC	.0373	7706 PPMC	.0408
NOX	900 PPM	2475 PPM	.0415	2708 PPM	.0454
CO	.73 PCT	2.01 PCT	.2048	2.20 PCT	.2242
CO2	4.38 PCT	12.04 PCT	1.9310	13.18 PCT	2.1134
O2	.84 PCT	2.31 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	155
3	151
4	143
5	142
6	158
7	155
8	145

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 120-3

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	10000	89.	.932
SAMP	3968	103.	.891
CARB	3982	110.	.871

ODOMETER	10847
TEST MILES	9.140
TEST MINUTES	26.26
CALC. MILES/HR	20.88
COUNT RATIO	.996
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	133.0

LICENSE NO.	7676CF
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	345
TRANSMISSION	5M/
AXLE RATIO	6.50/9.04
CARB. NO.	I3
DIST. NO.	I3
AIR CL. NO.	I2

DATE	6/15/67
TIME	9.40
GVW, LB	24000
LOAD, LB	7825
PER CENT LOAD	50
MAXIMUM BHP	197
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	83 F
PRESSURE	29.25 IN.
HUMIDITY	57 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.637
MILES/GALLON	8.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.05
DILUTION RATIO	3.793
EXH/AIR RATIO	.961
SCF EXH/MILE	127.8
MILES/GALLON	7.8

IDLE	
DWELL ANGLE	26
IGN. TIMING	.0
A/F RATIO	12.8
MAN. VAC.	17.0
RPM	425

ROUTE	DLA-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	58.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1575 PPMC	5728 PPMC	.0263	5974 PPMC	.0275
HC FID					
TOTAL	2879 PPMC	10471 PPMC	.0481	10920 PPMC	.0502
OLEFINS	644 PPMC	2342 PPMC	.0108	2443 PPMC	.0112
AROMAT.	727 PPMC	2644 PPMC	.0109	2758 PPMC	.0114
PARAFS.	1508 PPMC	5485 PPMC	.0264	5720 PPMC	.0276
NOX	283 PPM	1029 PPM	.0157	1073 PPM	.0164
CO	.89 PCT	3.24 PCT	.3008	3.38 PCT	.3137
CO2	3.29 PCT	11.97 PCT	1.7471	12.48 PCT	1.8221
O2	.37 PCT	1.35 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	172
3	162
4	164
5	168
6	161
7	165
8	165

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 120-4

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	2

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	8000	114.	.860
SAMP	4063	119.	.847
CARB	4078	114.	.860

ODOMETER	10870
TEST MILES	9.140
TEST MINUTES	27.23
CALC. MILES/HR	20.14
COUNT RATIO	.996
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	134.3

LICENSE NO.	7676CF
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	345
TRANSMISSION	5M/
AXLE RATIO	6.50/9.04
CARB. NO.	I3
DIST. NO.	I3
AIR CL. NO.	I2

DATE	6/15/67
TIME	11.22
GVW, LB	24000
LOAD, LB	7825
PER CENT LOAD	50
MAXIMUM BHP	197
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	86 F
PRESSURE	29.23 IN.
HUMIDITY	53 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.000
MILES/GALLON	8.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.03
DILUTION RATIO	3.175
EXH/AIR RATIO	.962
SCF EXH/MILE	129.2
MILES/GALLON	7.7

IDLE

DWELL ANGLE	26
IGN. TIMING	.0
A/F RATIO	12.8
MAN. VAC.	17.0
RPM	450

ROUTE	DLA-4
TRAFFIC	2

RPM/MPH

HIGH GEAR	58.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1860 PPMC	5580 PPMC	.0259	5905 PPMC	.0274
HC FID					
TOTAL	3482 PPMC	10446 PPMC	.0485	11055 PPMC	.0514
OLEFINS	809 PPMC	2427 PPMC	.0113	2568 PPMC	.0119
AROMAT.	754 PPMC	2262 PPMC	.0092	2394 PPMC	.0097
PARAFS.	1919 PPMC	5757 PPMC	.0281	6093 PPMC	.0297
NOX	345 PPM	1035 PPM	.0160	1095 PPM	.0169
CO	1.08 PCT	3.24 PCT	.3043	3.43 PCT	.3220
CO2	3.92 PCT	11.76 PCT	1.7351	12.45 PCT	1.8363
O2	.42 PCT	1.26 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	172
3	162
4	164
5	168
6	161
7	165
8	165

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 121-2

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	9000	110.	.871
SAMP	4327	108.	.877
CARB	4352	91.	.926

ODOMETER	130000
TEST MILES	9.140
TEST MINUTES	27.52
CALC. MILES/HR	19.93
COUNT RATIO	.994
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	156.6

LICENSE NO.	263D29
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	351
TRANSMISSION	5M/
AXLE RATIO	5.57/8.85
CARB. NO.	G2
DIST. NO.	G4
AIR CL. NO.	G4

DATE	6/19/67
TIME	1.52
GVW, LB	26000
LOAD, LB	8000
PER CENT LOAD	50
MAXIMUM BHP	195
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	74 F
PRESSURE	29.43 IN.
HUMIDITY	52 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.067
MILES/GALLON	7.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.72
DILUTION RATIO	3.077
EXH/AIR RATIO	.948
SCF EXH/MILE	148.4
MILES/GALLON	7.2

IDLE

DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	12.8
MAN. VAC.	16.5
RPM	550

ROUTE	DLA-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	55.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1185 PPMC	3634 PPMC	.0194	3646 PPMC	.0195
HC FID					
TOTAL	2241 PPMC	6873 PPMC	.0367	6895 PPMC	.0368
OLEFINS	528 PPMC	1619 PPMC	.0086	1625 PPMC	.0087
AROMAT.	725 PPMC	2223 PPMC	.0111	2231 PPMC	.0111
PARAFS.	988 PPMC	3030 PPMC	.0170	3040 PPMC	.0170
NOX	890 PPM	2729 PPM	.0484	2738 PPM	.0485
CO	.58 PCT	1.78 PCT	.1920	1.78 PCT	.1926
CO2	4.33 PCT	13.28 PCT	2.2516	13.32 PCT	2.2590
O2	.88 PCT	2.70 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	153
2	156
3	156
4	146
5	142
6	160
7	0
8	0

121-2

B-142

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 121-3

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	9000	114.	.860
SAMP	4280	108.	.877
CARB	4325	92.	.923

ODOMETER	130050
TEST MILES	9.140
TEST MINUTES	27.99
CALC. MILES/HR	19.59
COUNT RATIO	.990
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	155.1

LICENSE NO.	263D29
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	351
TRANSMISSION	5M/
AXLE RATIO	5.57/8.85
CARB. NO.	G2
DIST. NO.	G4
AIR CL. NO.	G4

DATE	6/19/67
TIME	4.20
GVW, LB	26000
LOAD, LB	8000
PER CENT LOAD	50
MAXIMUM BHP	195
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	74 F
PRESSURE	29.43 IN.
HUMIDITY	52 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.063
MILES/GALLON	7.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.69
DILUTION RATIO	3.262
EXH/AIR RATIO	.948
SCF EXH/MILE	147.1
MILES/GALLON	7.2

IDLE

DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	12.8
MAN. VAC.	17.5
RPM	600

ROUTE	DLA-4
TRAFFIC	3

RPM/MPH

HIGH GEAR	55.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1140 PPMC	3492 PPMC	.0185	3719 PPMC	.0197
HC FID					
TOTAL	2096 PPMC	6421 PPMC	.0340	6837 PPMC	.0362
OLEFINS	422 PPMC	1293 PPMC	.0068	1377 PPMC	.0073
AROMAT.	686 PPMC	2101 PPMC	.0103	2238 PPMC	.0110
PARAFS.	988 PPMC	3027 PPMC	.0168	3223 PPMC	.0179
NOX	897 PPM	2748 PPM	.0483	2926 PPM	.0514
CO	.56 PCT	1.72 PCT	.1835	1.83 PCT	.1954
CO2	4.08 PCT	12.50 PCT	2.1002	13.31 PCT	2.2364
O2	.83 PCT	2.54 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	153
2	156
3	156
4	146
5	142
6	160
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 122-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	99.	.902
SAMP	2240	103.	.891
CARB	2282	102.	.894

ODOMETER	25630
TEST MILES	8.400
TEST MINUTES	26.77
CALC. MILES/HR	18.83
COUNT RATIO	.982
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	85.9

LICENSE NO.	MF8835
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	266
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/20/67
TIME	3.40
GVW, LB	7300
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	80 F
PRESSURE	29.14 IN.
HUMIDITY	56 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.809
MILES/GALLON	11.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.02
DILUTION RATIO	2.809
EXH/AIR RATIO	.962
SCF EXH/MILE	82.7
MILES/GALLON	11.3

IDLE

DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	17.5
RPM	450

ROUTE	DLA-2
TRAFFIC	3
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2760 PPMC	7752 PPMC	.0230	7752 PPMC	.0230
HC FID					
TOTAL	5025 PPMC	14114 PPMC	.0420	14114 PPMC	.0420
OLEFINS	469 PPMC	1317 PPMC	.0039	1317 PPMC	.0039
AROMAT.	1943 PPMC	5457 PPMC	.0152	5457 PPMC	.0152
PARAFS.	2613 PPMC	7339 PPMC	.0229	7339 PPMC	.0229
NOX	311 PPM	874 PPM	.0086	874 PPM	.0086
CO	1.28 PCT	3.60 PCT	.2160	3.60 PCT	.2160
CO2	4.61 PCT	12.95 PCT	1.2224	12.95 PCT	1.2224
O2	.61 PCT	1.71 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	157
3	149
4	158
5	162
6	154
7	158
8	156

DIL. RATIO FROM CO/CO2 CALCN. = 2.697 IS LOWER THAN 2.809 FROM NITROGEN COUNTS

8-1X3

B-444

PURLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 122-4

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	93.	.920
SAMP	2380	97.	.908
CARB	2412	99.	.902

ODOMETER	25667
TEST MILES	8.400
TEST MINUTES	27.29
CALC. MILES/HR	18.47
COUNT RATIO	.987
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	91.4

LICENSE NO.	MF8835
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	266
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/21/67
TIME	11.40
GVW. LB	7300
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	75 F
PRESSURE	29.03 IN.
HUMIDITY	66 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.703
MILES/GALLON	10.8

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.98
DILUTION RATIO	2.703
EXH/AIR RATIO	.963
SCF EXH/MILE	87.9
MILES/GALLON	10.8

IDLE

DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	18.0
RPM	475

ROUTE	DLA-2
TRAFFIC	3
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3265 PPMC	8824 PPMC	.0279	8824 PPMC	.0279
HC FID					
TOTAL	5470 PPMC	14783 PPMC	.0467	14783 PPMC	.0467
OLEFINS	659 PPMC	1781 PPMC	.0056	1781 PPMC	.0056
AROMAT.	1714 PPMC	4632 PPMC	.0134	4632 PPMC	.0134
PARAFS.	3097 PPMC	8370 PPMC	.0278	8370 PPMC	.0278
NOX	335 PPM	905 PPM	.0095	905 PPM	.0095
CO	1.34 PCT	3.62 PCT	.2315	3.62 PCT	.2315
CO2	4.68 PCT	12.65 PCT	1.2705	12.65 PCT	1.2705
O2	.63 PCT	1.70 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	157
3	149
4	158
5	162
6	154
7	158
8	156

DIL. RATIO FROM CO/CO2 CALCN. = 2.644 IS LOWER THAN 2.703 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 123-3

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	85.	.945
SAMP	2478	93.	.920
CARB	2494	94.	.917

ODOMETER	12276
TEST MILES	8.400
TEST MINUTES	27.95
CALC. MILES/HR	18.03
COUNT RATIO	.994
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	96.4

LICENSE NO.	7111CZ
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	318
TRANSMISSION	4M/
AXLE RATIO	4.10/ .00
CARB. NO.	D2
DIST. NO.	D2
AIR CL. NO.	D2

DATE	6/22/67
TIME	4.10
GVW, LB	7500
LOAD, LB	1550
PER CENT LOAD	50
MAXIMUM BHP	200
CL.MASK, SQ. IN.	8.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	73 F
PRESSURE	29.12 IN.
HUMIDITY	66 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.657
MILES/GALLON	10.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.47
DILUTION RATIO	2.657
EXH/AIR RATIO	.974
SCF EXH/MILE	93.9
MILES/GALLON	10.1

IDLE

DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.6
MAN. VAC.	17.5
RPM	500

ROUTE	DLA-2
TRAFFIC	3

RPM/MPH

HIGH GEAR	49.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2455 PPMC	6523 PPMC	.0220	6523 PPMC	.0220
HC FID					
TOTAL	4228 PPMC	11234 PPMC	.0380	11234 PPMC	.0380
OLEFINS	299 PPMC	794 PPMC	.0027	794 PPMC	.0027
AROMAT.	1314 PPMC	3491 PPMC	.0106	3491 PPMC	.0106
PARAFS.	2615 PPMC	6948 PPMC	.0246	6948 PPMC	.0246
NOX	261 PPM	694 PPM	.0078	694 PPM	.0078
CO	1.83 PCT	4.86 PCT	.3321	4.86 PCT	.3321
CO2	4.39 PCT	11.66 PCT	1.2517	11.66 PCT	1.2517
O2	.77 PCT	2.05 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	152
3	143
4	149
5	143
6	146
7	147
8	151

DIL. RATIO FROM CO/CO2 CALCN. = 2.633 IS LOWER THAN 2.657 FROM NITROGEN COUNTS

B-145

B-116

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 123-4

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	74.	.980
SAMP	2167	85.	.945
CARB	2253	89.	.932

ODOMETER	12307
TEST MILES	8.400
TEST MINUTES	24.72
CALC. MILES/HR	20.39
COUNT RATIO	.962
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	88.8

LICENSE NO.	7111CZ
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	318
TRANSMISSION	4M/
AXLE RATIO	4.10/ .00
CARB. NO.	D2
DIST. NO.	D2
AIR CL. NO.	D2

DATE	6/23/67
TIME	9.40
GVW, LB	7500
LOAD, LB	1550
PER CENT LOAD	50
MAXIMUM BHP	200
CL.MASK, SQ. IN.	8.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	73 F
PRESSURE	29.20 IN.
HUMIDITY	66 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.915
MILES/GALLON	10.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.47
DILUTION RATIO	2.915
EXH/AIR RATIO	.974
SCF EXH/MILE	86.5
MILES/GALLON	10.7

IDLE	
DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.6
MAN. VAC.	17.5
RPM	500

ROUTE	DLA-2
TRAFFIC	1
RPM/MPH	
HIGH GEAR	49.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2350 PPMC	6850 PPMC	.0213	6850 PPMC	.0213
HC FID					
TOTAL	4044 PPMC	11788 PPMC	.0367	11788 PPMC	.0367
OLEFINS	270 PPMC	787 PPMC	.0024	787 PPMC	.0024
AROMAT.	1280 PPMC	3731 PPMC	.0105	3731 PPMC	.0105
PARAFS.	2494 PPMC	7270 PPMC	.0237	7270 PPMC	.0237
NOX	240 PPM	700 PPM	.0072	700 PPM	.0072
CO	1.72 PCT	5.01 PCT	.3153	5.01 PCT	.3153
CO2	4.13 PCT	12.04 PCT	1.1895	12.04 PCT	1.1895
O2	.78 PCT	2.27 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	152
3	143
4	149
5	143
6	146
7	147
8	151

DIL. RATIO FROM CO/CO2 CALCN. = 2.799 IS LOWER THAN 2.915 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 124-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	7000	72.	.987
SAMP	3083	87.	.939
CARB	3084	92.	.923

ODOMETER	40706
TEST MILES	8.400
TEST MINUTES	25.04
CALC. MILES/HR	20.13
COUNT RATIO	1.000
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	120.4

LICENSE NO.	4407DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/26/67
TIME	9.35
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	68 F
PRESSURE	29.42 IN.
HUMIDITY	61 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.387
MILES/GALLON	8.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.58
DILUTION RATIO	3.387
EXH/AIR RATIO	.972
SCF EXH/MILE	117.0
MILES/GALLON	8.4

IDLE

DWELL ANGLE	34
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	16.5
RPM	500

ROUTE	DLA-3
TRAFFIC	1
RPM/MPH	
HIGH GEAR	59.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1135 PPMC	3844 PPMC	.0162	3844 PPMC	.0162
HC FID					
TOTAL	2093 PPMC	7089 PPMC	.0298	7089 PPMC	.0298
OLEFINS	331 PPMC	1121 PPMC	.0047	1121 PPMC	.0047
AROMAT.	503 PPMC	1704 PPMC	.0063	1704 PPMC	.0063
PARAFS.	1259 PPMC	4264 PPMC	.0188	4264 PPMC	.0188
NOX	345 PPM	1169 PPM	.0163	1169 PPM	.0163
CO	1.35 PCT	4.57 PCT	.3889	4.57 PCT	.3889
CO2	3.48 PCT	11.79 PCT	1.5749	11.79 PCT	1.5749
O2	.43 PCT	1.46 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	146
2	151
3	160
4	155
5	158
6	150
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.370 IS LOWER THAN 3.387 FROM NITROGEN COUNTS

LW-2

3-148

PUPLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 124-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. COPR.
NITR	7000	92.	.923
SAMP	2865	95.	.914
CARB	2864	91.	.926

ODOMETER	40722
TEST MILES	8.400
TEST MINUTES	22.04
CALC. MILES/HR	22.87
COUNT RATIO	1.000
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	112.1

LICENSE NO.	4407DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/26/67
TIME	10.50
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	72 F
PRESSURE	29.42 IN.
HUMIDITY	55 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.467
MILES/GALLON	9.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.62
DILUTION RATIO	3.467
EXH/AIR RATIO	.971
SCF EXH/MILE	108.8
MILES/GALLON	9.0

IDLE	
DWELL ANGLE	34
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	16.5
RPM	550

ROUTE	DLA-3
TRAFFIC	1
RPM/MPH	
HIGH GEAR	59.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1110 PPMC	3849 PPMC	.0151	3849 PPMC	.0151
HC FID					
TOTAL	2041 PPMC	7077 PPMC	.0277	7077 PPMC	.0277
OLEFINS	319 PPMC	1106 PPMC	.0043	1106 PPMC	.0043
AROMAT.	530 PPMC	1838 PPMC	.0064	1838 PPMC	.0064
PARAFS.	1192 PPMC	4133 PPMC	.0170	4133 PPMC	.0170
NOX	357 PPM	1238 PPM	.0161	1238 PPM	.0161
CO	1.29 PCT	4.47 PCT	.3538	4.47 PCT	.3538
CO2	3.43 PCT	11.69 PCT	1.4782	11.89 PCT	1.4782
O2	.37 PCT	1.28 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	146
2	151
3	160
4	155
5	158
6	150
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.440 IS LOWER THAN 3.467 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 125-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	4000	70.	.993
SAMP	2286	86.	.941
CARB	2286	92.	.923

ODOMETER	14673
TEST MILES	8.400
TEST MINUTES	27.29
CALC. MILES/HR	18.47
COUNT RATIO	1.000
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	90.0

LICENSE NO.	7686CF
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F4
DIST. NO.	F4
AIR CL. NO.	F1

DATE	6/27/67
TIME	9.10
GVW. LB	7500
LOAD. LB	1825
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK. SQ. IN.	.0
PCV. CFM	1.9

AMBIENT CONDITIONS

TEMP.	73 F
PRESSURE	29.41 IN.
HUMIDITY	60 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.846
MILES/GALLON	10.0

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.44
DILUTION RATIO	2.846
EXH/AIR RATIO	.975
SCF EXH/MILE	87.8
MILES/GALLON	10.0

IDLE

DWELL ANGLE	39
IGN. TIMING	-6.0
A/F RATIO	12.8
MAN. VAC.	18.0
RPM	500

ROUTE	DLA-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3130 PPMC	8908 PPMC	.0281	8908 PPMC	.0281
HC FID					
TOTAL	5538 PPMC	15761 PPMC	.0497	15761 PPMC	.0497
OLEFINS	437 PPMC	1244 PPMC	.0039	1244 PPMC	.0039
AROMAT.	1590 PPMC	4525 PPMC	.0127	4525 PPMC	.0127
PARAFS.	3511 PPMC	9992 PPMC	.0331	9992 PPMC	.0331
NOX	342 PPM	973 PPM	.0102	973 PPM	.0102
CO	1.85 PCT	5.27 PCT	.3360	5.27 PCT	.3360
CO2	4.35 PCT	12.38 PCT	1.2412	12.38 PCT	1.2412
O2	.61 PCT	1.74 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	183
2	197
3	196
4	191
5	196
6	185
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.645 IS LOWER THAN 2.846 FROM NITROGEN COUNTS

6/1-8

B-150

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 125-3

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	100.	.900
SAMP	2270	105.	.885
CARB	2290	99.	.902

ODOMETER	14695
TEST MILES	8.400
TEST MINUTES	25.95
CALC. MILES/HR	19.42
COUNT RATIO	.991
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	88.2

LICENSE NO.	7686CF
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F4
DIST. NO.	F4
AIR CL. NO.	F1

DATE	6/27/67
TIME	10.50
GVW. LB	7500
LOAD. LB	1825
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK. SQ. IN.	.0
PCV. CFM	1.9

AMBIENT CONDITIONS

TEMP.	76 F
PRESSURE	29.41 IN.
HUMIDITY	54 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.791
MILES/GALLON	10.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.52
DILUTION RATIO	2.791
EXH/AIR RATIO	.973
SCF EXH/MILE	85.8
MILES/GALLON	10.8

IDLE

DWELL ANGLE	39
IGN. TIMING	-6.0
A/F RATIO	12.8
MAN. VAC.	18.0
RPM	500

ROUTE	DLA-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3180 PPMC	8874 PPMC	.0274	8874 PPMC	.0274
HC FID					
TOTAL	5199 PPMC	14508 PPMC	.0448	14508 PPMC	.0448
OLEFINS	400 PPMC	1116 PPMC	.0034	1116 PPMC	.0034
AROMAT.	1467 PPMC	4094 PPMC	.0112	4094 PPMC	.0112
PARAFS.	3332 PPMC	9298 PPMC	.0301	9298 PPMC	.0301
NOX	362 PPM	1010 PPM	.0103	1010 PPM	.0103
CO	1.73 PCT	4.83 PCT	.3011	4.83 PCT	.3011
CO2	4.27 PCT	11.92 PCT	1.1678	11.92 PCT	1.1678
O2	.58 PCT	1.62 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	183
2	197
3	196
4	191
5	196
6	185
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.723 IS LOWER THAN 2.791 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 126-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	80.	.960
SAMP	3350	82.	.954
CARB	3348	104.	.888

ODOMETER	35137
TEST MILES	8.400
TEST MINUTES	26.74
CALC. MILES/HR	18.85
COUNT RATIO	1.001
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	12[illegible].6

LICENSE NO.	7612CF
MODEL YEAR	1964
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.17/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/28/67
TIME	10.55
GVW, LB	20000
LOAD, LB	5500
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	1.4

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.25 IN.
HUMIDITY	78 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.104
MILES/GALLON	8.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.24
DILUTION RATIO	3.228
EXH/AIR RATIO	.957
SCF EXH/MILE	119.2
MILES/GALLON	8.4

IDLE

DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.7
MAN. VAC.	18.0
RPM	450

ROUTE	DLA-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	54.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1970 PPMC	6114 PPMC	.0262	6358 PPMC	.0273
HC FID					
TOTAL	3359 PPMC	10425 PPMC	.0447	10841 PPMC	.0465
OLEFINS	343 PPMC	1065 PPMC	.0046	1107 PPMC	.0047
AROMAT.	754 PPMC	2340 PPMC	.0086	2434 PPMC	.0089
PARAFS.	2262 PPMC	7020 PPMC	.0316	7301 PPMC	.0328
NOX	348 PPM	1080 PPM	.0154	1123 PPM	.0160
CO	.90 PCT	2.79 PCT	.2421	2.90 PCT	.2518
CO2	3.96 PCT	12.29 PCT	1.6739	12.78 PCT	1.7407
O2	.47 PCT	1.46 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	128
2	142
3	120
4	146
5	158
6	135
7	150
8	152

B-152

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 126-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	74.	.980
SAMP	3290	79.	.964
CARB	3296	104.	.888

ODOMETER	35160
TEST MILES	8.400
TEST MINUTES	25.83
CALC. MILES/HR	19.51
COUNT RATIO	.998
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	122.4

LICENSE NO.	7612CF
MODEL YEAR	1964
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.17/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/28/67
TIME	1.55
GVW, LB	20000
LOAD, LB	5500
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	1.4

AMBIENT CONDITIONS

TEMP.	66 F
PRESSURE	29.20 IN.
HUMIDITY	81 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.164
MILES/GALLON	8.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.25
DILUTION RATIO	3.258
EXH/AIR RATIO	.957
SCF EXH/MILE	117.1
MILES/GALLON	8.6

IDLE	
DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.7
MAN. VAC.	18.5
RPM	475
ROUTE	DLA-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	54.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1863 PPMC	5894 PPMC	.0248	6070 PPMC	.0256
HC FID					
TOTAL	3203 PPMC	10133 PPMC	.0427	10436 PPMC	.0440
OLEFINS	313 PPMC	990 PPMC	.0042	1020 PPMC	.0043
AROMAT.	777 PPMC	2458 PPMC	.0090	2532 PPMC	.0092
PARAFS.	2113 PPMC	6685 PPMC	.0295	6885 PPMC	.0304
NOX	344 PPM	1088 PPM	.0152	1121 PPM	.0157
CO	.88 PCT	2.78 PCT	.2371	2.87 PCT	.2442
CO2	3.93 PCT	12.43 PCT	1.6635	12.80 PCT	1.7133
O2	.42 PCT	1.33 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	128
2	142
3	120
4	146
5	158
6	135
7	150
8	152

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 127-1

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	3
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	94.	.917
SAMP	3410	97.	.908
CARB	3402	85.	.945

ODOMETER	28751
TEST MILES	8.400
TEST MINUTES	25.38
CALC. MILES/HR	19.86
COUNT RATIO	1.002
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	133.4

LICENSE NO.	4405DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/29/67
TIME	2.30
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	68 F
PRESSURE	29.09 IN.
HUMIDITY	70 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.073
MILES/GALLON	7.2

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.55
DILUTION RATIO	3.073
EXH/AIR RATIO	.972
SCF EXH/MILE	129.7
MILES/GALLON	7.2

IDLE

DWELL ANGLE	39
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	18.0
RPM	475

ROUTE	DLA-3
TRAFFIC	1
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2230 PPMC	6852 PPMC	.0320	6852 PPMC	.0320
HC FID					
TOTAL	3935 PPMC	12092 PPMC	.0564	12092 PPMC	.0564
OLEFINS	370 PPMC	1137 PPMC	.0053	1137 PPMC	.0053
AROMAT.	864 PPMC	2655 PPMC	.0105	2655 PPMC	.0105
PARAFS.	2701 PPMC	8300 PPMC	.0406	8300 PPMC	.0406
NOX	356 PPM	1094 PPM	.0169	1094 PPM	.0169
CO	1.55 PCT	4.76 PCT	.4493	4.76 PCT	.4493
CO2	3.92 PCT	12.05 PCT	1.7851	12.05 PCT	1.7851
O2	.45 PCT	1.38 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	157
3	155
4	159
5	155
6	159
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.980 IS LOWER THAN 3.073 FROM NITROGEN COUNTS

ESV-68

B-154

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 127-2

ROAD OPN.	LOS ANGELES
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	3
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	74.	.980
SAMP	3613	97.	.908
CARB	3625	97.	.908

ODOMETER	28738
TEST MILES	8.400
TEST MINUTES	25.19
CALC. MILES/HR	20.01
COUNT RATIO	.997
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	136.1

LICENSE NO.	4405DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/30/67
TIME	10.35
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	77 F
PRESSURE	29.13 IN.
HUMIDITY	71 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.090
MILES/GALLON	7.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.62
DILUTION RATIO	3.090
EXH/AIR RATIO	.971
SCF EXH/MILE	132.1
MILES/GALLON	7.2

IDLE

DWELL ANGLE	39
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	18.0
RPM	500

ROUTE	DLA-3
TRAFFIC	2
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2200 PPMC	6799 PPMC	.0323	6799 PPMC	.0323
HC FID					
TOTAL	3945 PPMC	12191 PPMC	.0579	12191 PPMC	.0579
OLEFINS	669 PPMC	2067 PPMC	.0098	2067 PPMC	.0098
AROMAT.	823 PPMC	2543 PPMC	.0103	2543 PPMC	.0103
PARAFS.	2453 PPMC	7580 PPMC	.0378	7580 PPMC	.0378
NOX	425 PPM	1313 PPM	.0207	1313 PPM	.0207
CO	1.46 PCT	4.51 PCT	.4332	4.51 PCT	.4332
CO2	3.87 PCT	11.96 PCT	1.8040	11.96 PCT	1.8040
O2	.43 PCT	1.33 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	157
3	155
4	159
5	155
6	159
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.047 IS LOWER THAN 3.090 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 128-1

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	76.	.973
SAMP	5102	100.	.900
CARB	5119	84.	.948

ODOMETER	34348
TEST MILES	9.140
TEST MINUTES	24.71
CALC. MILES/HR	22.19
COUNT RATIO	.997
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	189.7

LICENSE NO.	9668CD
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	7.10/9.01
CARB. NO.	D3
DIST. NO.	D2
AIR CL. NO.	I3

DATE	7/ 5/67
TIME	11.30
GVW, LB	25000
LOAD, LB	9000
PER CENT LOAD	50
MAXIMUM BHP	194
CL.MASK, SQ. IN.	.0
PCV, CFM	.5

AMBIENT CONDITIONS

TEMP.	64 F
PRESSURE	29.50 IN.
HUMIDITY	54 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.697
MILES/GALLON	5.3

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.55
DILUTION RATIO	2.773
EXH/AIR RATIO	.972
SCF EXH/MILE	184.5
MILES/GALLON	5.2

IDLE

DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.2
MAN. VAC.	15.5
RPM	500

ROUTE	DLA-4
TRAFFIC	1
RPM/MPH	
HIGH GEAR	60.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2990 PPMC	8063 PPMC	.0535	8292 PPMC	.0550
HC FID					
TOTAL	4877 PPMC	13152 PPMC	.0872	13526 PPMC	.0897
OLEFINS	528 PPMC	1424 PPMC	.0094	1464 PPMC	.0097
AROMAT.	725 PPMC	1955 PPMC	.0098	2011 PPMC	.0101
PARAFS.	3624 PPMC	9773 PPMC	.0680	10051 PPMC	.0699
NOX	638 PPM	1720 PPM	.0379	1769 PPM	.0390
CO	1.67 PCT	4.50 PCT	.6039	4.63 PCT	.6211
CO2	4.21 PCT	11.35 PCT	2.3920	11.68 PCT	2.4600
O2	.46 PCT	1.24 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	124
2	124
3	123
4	116
5	123
6	125
7	126
8	125

R-195

151-B

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 128-2

ROAD OPN.	LOS ANGELES
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	4
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	8000	96.	.911
SAMP	5127	105.	.885
CARB	5142	79.	.964

ODOMETER	34370
TEST MILES	9.140
TEST MINUTES	25.40
CALC. MILES/HR	21.59
COUNT RATIO	.997
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	193.7

LICENSE NO.	9668CD
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	7.10/9.01
CARB. NO.	D3
DIST. NO.	D2
AIR CL. NO.	I3

DATE	7/ 5/67
TIME	2.15
GVW, LB	25000
LOAD, LB	9000
PER CENT LOAD	50
MAXIMUM BHP	194
CL.MASK, SQ. IN.	8.0
PCV, CFM	.5

AMBIENT CONDITIONS

TEMP.	66 F
PRESSURE	29.49 IN.
HUMIDITY	50 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.606
MILES/GALLON	5.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.43
DILUTION RATIO	2.717
EXH/AIR RATIO	.975
SCF EXH/MILE	188.9
MILES/GALLON	5.0

IDLE

DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.2
MAN. VAC.	16.5
RPM	500

ROUTE	DLA-4
TRAFFIC	2
RPM/MPH	
HIGH GEAR	60.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3260 PPMC	8496 PPMC	.0577	8857 PPMC	.0602
HC FID					
TOTAL	5310 PPMC	13839 PPMC	.0940	14427 PPMC	.0980
OLEFINS	590 PPMC	1538 PPMC	.0104	1603 PPMC	.0109
AROMAT.	761 PPMC	1983 PPMC	.0100	2068 PPMC	.0105
PARAFS.	3959 PPMC	10318 PPMC	.0735	10756 PPMC	.0766
NOX	581 PPM	1514 PPM	.0341	1579 PPM	.0356
CO	1.81 PCT	4.72 PCT	.6477	4.92 PCT	.6753
CO2	4.23 PCT	11.02 PCT	2.3783	11.49 PCT	2.4795
O2	.43 PCT	1.12 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	124
2	124
3	123
4	116
5	123
6	125
7	126
8	125

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 129-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	4

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	80.	.960
SAMP	2455	93.	.920
CARB	2503	100.	.900

ODOMETER	21192
TEST MILES	8.400
TEST MINUTES	27.05
CALC. MILES/HR	18.63
COUNT RATIO	.981
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	95.5

LICENSE NO.	4410DZ
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	5.12/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	7/ 6/67
TIME	9.40
GVW, LB	10000
LOAD, LB	2075
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.57 IN.
HUMIDITY	54 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.701
MILES/GALLON	10.0

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.63
DILUTION RATIO	2.701
EXH/AIR RATIO	.970
SCF EXH/MILE	92.6
MILES/GALLON	10.0

IDLE	
DWELL ANGLE	36
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	18.5
RPM	500

ROUTE	DLA-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	58.10
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3440 PPMC	9290 PPMC	.0310	9290 PPMC	.0310
HC FID					
TOTAL	5665 PPMC	15299 PPMC	.0510	15299 PPMC	.0510
OLEFINS	436 PPMC	1177 PPMC	.0039	1177 PPMC	.0039
AROMAT.	996 PPMC	2690 PPMC	.0071	2690 PPMC	.0071
PARAFS.	4233 PPMC	11432 PPMC	.0400	11432 PPMC	.0400
NOX	433 PPM	1169 PPM	.0129	1169 PPM	.0129
CO	1.67 PCT	4.51 PCT	.3038	4.51 PCT	.3038
CO2	4.46 PCT	12.04 PCT	1.2746	12.04 PCT	1.2746
O2	.57 PCT	1.54 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	178
3	175
4	182
5	178
6	165
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.648 IS LOWER THAN 2.701 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 129-3

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	4
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	6000	97.	.908
SAMP	2435	105.	.885
CARB	2452	102.	.894

ODOMETER	21210
TEST MILES	8.400
TEST MINUTES	26.81
CALC. MILES/HR	18.80
COUNT RATIO	.993
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	92.9

LICENSE NO.	4410DZ
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	5.12/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	7/ 6/67
TIME	11.35
GVW, LB	10000
LOAD, LB	2075
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	70 F
PRESSURE	29.57 IN.
HUMIDITY	51 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.528
MILES/GALLON	10.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.60
DILUTION RATIO	3.528
EXH/AIR RATIO	.971
SCF EXH/MILE	90.2
MILES/GALLON	10.2

IDLE

DWELL ANGLE	36
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	18.5
RPM	475

ROUTE	DLA-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	58.10
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2920 PPMC	10302 PPMC	.0334	10302 PPMC	.0334
HC FID					
TOTAL	4731 PPMC	16692 PPMC	.0541	16692 PPMC	.0541
OLEFINS	436 PPMC	1538 PPMC	.0050	1538 PPMC	.0050
AROMAT.	734 PPMC	2590 PPMC	.0064	2590 PPMC	.0064
PARAFS.	3561 PPMC	12564 PPMC	.0427	12564 PPMC	.0427
NOX	331 PPM	1168 PPM	.0126	1168 PPM	.0126
CO	1.31 PCT	4.62 PCT	.3031	4.62 PCT	.3031
CO2	3.42 PCT	12.07 PCT	1.2431	12.07 PCT	1.2431
O2	.56 PCT	1.98 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	178
3	175
4	182
5	178
6	165
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.438 IS LOWER THAN 3.528 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 130-4

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5000	80.	.960
SAMP	2280	86.	.941
CARB	2270	93.	.920

ODOMETER	13447
TEST MILES	8.400
TEST MINUTES	26.53
CALC. MILES/HR	19.00
COUNT RATIO	1.004
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	88.8

LICENSE NO.	7670CM
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C3

DATE	7/ 7/67
TIME	2.20
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.3

AMBIENT CONDITIONS

TEMP.	76 F
PRESSURE	29.46 IN.
HUMIDITY	69 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.237
MILES/GALLON	11.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.25
DILUTION RATIO	3.266
EXH/AIR RATIO	.957
SCF EXH/MILE	85.0
MILES/GALLON	11.7

IDLE

DWELL ANGLE	33
IGN. TIMING	-4.0
A/F RATIO	12.8
MAN. VAC.	18.5
RPM	475

ROUTE	DLA-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2080 PPMC	6733 PPMC	.0206	6792 PPMC	.0208
HC FID					
TOTAL	3686 PPMC	11932 PPMC	.0365	12037 PPMC	.0368
OLEFINS	445 PPMC	1440 PPMC	.0044	1453 PPMC	.0044
AROMAT.	458 PPMC	1483 PPMC	.0032	1496 PPMC	.0032
PARAFS.	2783 PPMC	9009 PPMC	.0289	9088 PPMC	.0291
NOX	444 PPM	1437 PPM	.0146	1450 PPM	.0147
CO	.88 PCT	2.85 PCT	.1761	2.87 PCT	.1776
CO2	3.92 PCT	12.69 PCT	1.2323	12.80 PCT	1.2432
O2	.56 PCT	1.81 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	190
2	196
3	197
4	194
5	196
6	198
7	0
8	0

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 130-5

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	1

ROAD ROUTE

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	5000	80.	.960
SAMP	2280	86.	.941
CARB	2270	93.	.920

ODOMETER	13468
TEST MILES	8.400
TEST MINUTES	26.53
CALC. MILES/HR	19.00
COUNT RATIO	1.004
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	88.8

LICENSE NO.	7670CM
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C3

DATE	7/ 7/67
TIME	4.20
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.3

AMBIENT CONDITIONS

TEMP.	76 F
PRESSURE	29.46 IN.
HUMIDITY	69 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.237
MILES/GALLON	11.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.25
DILUTION RATIO	3.266
EXH/AIR RATIO	.957
SCF EXH/MILE	85.0
MILES/GALLON	11.7

IDLE

DWELL ANGLE	33
IGN. TIMING	-4.0
A/F RATIO	12.8
MAN. VAC.	18.5
RPM	475

ROUTE	DLA-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2080 PPMC	6733 PPMC	.0206	6792 PPMC	.0208
HC FID					
TOTAL	3686 PPMC	11932 PPMC	.0365	12037 PPMC	.0368
OLEFINS	445 PPMC	1440 PPMC	.0044	1453 PPMC	.0044
AROMAT.	458 PPMC	1483 PPMC	.0032	1496 PPMC	.0032
PARAFS.	2783 PPMC	9009 PPMC	.0289	9088 PPMC	.0291
NOX	444 PPM	1437 PPM	.0146	1450 PPM	.0147
CO	.88 PCT	2.85 PCT	.1761	2.87 PCT	.1776
CO2	3.92 PCT	12.69 PCT	1.2323	12.80 PCT	1.2432
O2	.56 PCT	1.81 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	190
2	196
3	197
4	194
5	196
6	198
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 131-2

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	3
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5000	82.	.954
SAMP	1797	102.	.894
CARB	1759	94.	.917

ODOMETER	16955
TEST MILES	8.400
TEST MINUTES	26.86
CALC. MILES/HR	18.76
COUNT RATIO	1.022
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	66.9

LICENSE NO.	345D93
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	7/10/67
TIME	1.30
GVW, LB	7500
LOAD, LB	1450
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	74 F
PRESSURE	29.18 IN.
HUMIDITY	87 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.970
MILES/GALLON	15.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.36
DILUTION RATIO	4.312
EXH/AIR RATIO	.977
SCF EXH/MILE	65.4
MILES/GALLON	14.3

IDLE

DWELL ANGLE	29
IGN. TIMING	-4.0
A/F RATIO	13.0
MAN. VAC.	18.5
RPM	500

ROUTE	DLA-2
TRAFFIC	2
RPM/MPH	
HIGH GEAR	46.40
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2120 PPMC	8416 PPMC	.0198	9141 PPMC	.0215
HC FID					
TOTAL	3511 PPMC	13938 PPMC	.0328	15139 PPMC	.0356
OLEFINS	318 PPMC	1262 PPMC	.0030	1371 PPMC	.0032
AROMAT.	318 PPMC	1262 PPMC	.0017	1371 PPMC	.0018
PARAFS.	2875 PPMC	11414 PPMC	.0281	12397 PPMC	.0306
NOX	87 PPM	345 PPM	.0027	375 PPM	.0029
CO	1.18 PCT	4.68 PCT	.2226	5.09 PCT	.2418
CO2	2.64 PCT	10.48 PCT	.7825	11.38 PCT	.8499
O2	.63 PCT	2.50 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	175
2	170
3	182
4	172
5	174
6	171
7	174
8	173

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 131-3

ROAD OPN.	LOS ANGELES
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	3
ROAD ROUTE	

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	5000	97.	.908
SAMP	1824	109.	.874
CARB	1823	97.	.908

ODOMETER	16978
TEST MILES	8.400
TEST MINUTES	28.14
CALC. MILES/HR	17.91
COUNT RATIO	1.001
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	68.8

LICENSE NO.	345D93
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	7/10/67
TIME	3.45
GVW, LB	7500
LOAD, LB	1450
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	76 F
PRESSURE	29.17 IN.
HUMIDITY	76 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.848
MILES/GALLON	15.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.37
DILUTION RATIO	4.221
EXH/AIR RATIO	.977
SCF EXH/MILE	67.2
MILES/GALLON	14.0

IDLE

DWELL ANGLE	29
IGN. TIMING	-4.0
A/F RATIO	13.0
MAN. VAC.	18.5
RPM	500

ROUTE	DLA-2
TRAFFIC	3
RPM/MPH	
HIGH GEAR	46.40
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2140 PPMC	8236 PPMC	.0199	9034 PPMC	.0218
HC FID					
TOTAL	3458 PPMC	13308 PPMC	.0321	14598 PPMC	.0353
OLEFINS	278 PPMC	1070 PPMC	.0026	1174 PPMC	.0028
AROMAT.	371 PPMC	1428 PPMC	.0022	1566 PPMC	.0024
PARAFS.	2809 PPMC	10810 PPMC	.0274	11858 PPMC	.0300
NOX	115 PPM	443 PPM	.0035	485 PPM	.0039
CO	1.20 PCT	4.62 PCT	.2255	5.07 PCT	.2474
CO2	2.70 PCT	10.39 PCT	.7972	11.40 PCT	.8744
O2	.61 PCT	2.35 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	175
2	170
3	182
4	172
5	174
6	171
7	174
8	173

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 201-3

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	74.	.980
SAMP	1467	86.	.941
CARB	1465	79.	.964

ODOMETER	7723
TEST MILES	2.210
TEST MINUTES	6.88
CALC. MILES/HR	19.27
COUNT RATIO	1.001
AVE. COUNTS/MIN	273.9
CUR. FT./COUNT	.361
SCF AIR/MILE	224.8

LICENSE NO.	16M797
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	4/26/67
TIME	4.15
GVW. LB	30000
LOAD. LB	11000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK. SQ. IN.	.0
PCV. CFM	2.0

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.30 IN.
HUMIDITY	33 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.774
MILES/GALLON	5.2

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.98
DILUTION RATIO	2.846
EXH/AIR RATIO	.943
SCF EXH/MILE	212.0
MILES/GALLON	5.1

IDLE	
DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	500

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1290 PPMC	3578 PPMC	.0273	3672 PPMC	.0280
HC FID					
TOTAL	2517 PPMC	6981 PPMC	.0532	7165 PPMC	.0546
OLEFINS	728 PPMC	2019 PPMC	.0154	2072 PPMC	.0158
AROMAT.	637 PPMC	1767 PPMC	.0123	1813 PPMC	.0126
PARAFS.	1152 PPMC	3195 PPMC	.0256	3279 PPMC	.0262
NOX	800 PPM	2219 PPM	.0562	2277 PPM	.0576
CO	.49 PCT	1.36 PCT	.2095	1.39 PCT	.2150
CO2	4.72 PCT	13.09 PCT	3.1704	13.44 PCT	3.2536
O2	.70 PCT	1.94 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	174
2	169
3	177
4	175
5	169
6	176
7	170
8	172

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 201-4

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	74.	.980
SAMP	1388	87.	.938
CARB	1381	84.	.948

ODOMETER	7732
TEST MILES	2.100
TEST MINUTES	6.56
CALC. MILES/HR	19.21
COUNT RATIO	1.005
AVE. COUNTS/MIN	273.9
CUB. FT./COUNT	.361
SCF AIR/MILE	220.6

LICENSE NO.	16M797
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	4/26/67
TIME	9.00
GVW, LB	30000
LOAD, LB	11000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.45 IN.
HUMIDITY	30 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.881
MILES/GALLON	5.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.02
DILUTION RATIO	2.917
EXH/AIR RATIO	.942
SCF EXH/MILE	207.9
MILES/GALLON	5.2

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	500

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1150 PPMC	3313 PPMC	.0248	3355 PPMC	.0251
HC FID					
TOTAL	2258 PPMC	6505 PPMC	.0486	6587 PPMC	.0492
OLEFINS	562 PPMC	1619 PPMC	.0121	1640 PPMC	.0122
AROMAT.	717 PPMC	2066 PPMC	.0144	2092 PPMC	.0146
PARAFS.	979 PPMC	2820 PPMC	.0221	2856 PPMC	.0224
NOX	753 PPM	2169 PPM	.0538	2197 PPM	.0545
CO	.46 PCT	1.33 PCT	.2003	1.34 PCT	.2028
CO2	4.61 PCT	13.28 PCT	3.1531	13.45 PCT	3.1931
O2	.78 PCT	2.25 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	174
2	169
3	177
4	175
5	169
6	176
7	170
8	172

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 203-3

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	85.	.945
SAMP	1456	87.	.938
CARB	1449	80.	.960

ODOMETER	2861
TEST MILES	2.910
TEST MINUTES	9.16
CALC. MILES/HR	19.06
COUNT RATIO	1.005
AVE. COUNTS/MIN	275.6
CUR. FT./COUNT	.359
SCF AIR/MILE	165.5

LICENSE NO.	15M618
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	5/ 1/67
TIME	10.00
GVW, LB	20000
LOAD, LB	5000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	29.01 IN.
HUMIDITY	38 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.383
MILES/GALLON	7.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.55
DILUTION RATIO	2.657
EXH/AIR RATIO	.951
SCF EXH/MILE	157.4
MILES/GALLON	6.5

IDLE

DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	18.5
RPM	500

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2420 PPMC	5766 PPMC	.0326	6431 PPMC	.0364
HC FID					
TOTAL	3976 PPMC	9474 PPMC	.0536	10565 PPMC	.0598
OLEFINS	960 PPMC	2287 PPMC	.0129	2551 PPMC	.0144
AROMAT.	1097 PPMC	2614 PPMC	.0135	2915 PPMC	.0151
PARAFS.	1919 PPMC	4572 PPMC	.0271	5099 PPMC	.0303
NOX	787 PPM	1875 PPM	.0352	2091 PPM	.0393
CO	.80 PCT	1.91 PCT	.2181	2.13 PCT	.2432
CO2	4.97 PCT	11.84 PCT	2.1286	13.21 PCT	2.3740
O2	1.43 PCT	3.41 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 203-4

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	78.	.967
SAMP	1228	82.	.954
CARB	1230	82.	.954

ODOMETER	2866
TEST MILES	2.360
TEST MINUTES	7.45
CALC. MILES/HR	19.01
COUNT RATIO	.998
AVE. COUNTS/MIN	275.6
CUR. FT./COUNT	.359
SCF AIR/MILE	171.8

LICENSE NO.	15M618
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	5/ 2/67
TIME	11.00
GVW, LB	20000
LOAD, LB	5000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	62 F
PRESSURE	28.98 IN.
HUMIDITY	35 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.651
MILES/GALLON	6.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.73
DILUTION RATIO	2.848
EXH/AIR RATIO	.948
SCF EXH/MILE	162.8
MILES/GALLON	6.4

IDLE

DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	18.0
RPM	500

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2310 PPMC	6123 PPMC	.0358	6579 PPMC	.0385
HC FID					
TOTAL	3770 PPMC	9992 PPMC	.0585	10737 PPMC	.0629
OLEFINS	822 PPMC	2179 PPMC	.0127	2341 PPMC	.0137
AROMAT.	1056 PPMC	2799 PPMC	.0150	3008 PPMC	.0161
PARAFS.	1892 PPMC	5015 PPMC	.0308	5388 PPMC	.0331
NOX	947 PPM	2510 PPM	.0488	2697 PPM	.0524
CO	.62 PCT	1.64 PCT	.1945	1.77 PCT	.2090
CO2	4.68 PCT	12.40 PCT	2.3069	13.33 PCT	2.4788
O2	1.03 PCT	2.73 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 204-2

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	81.	.957
SAMP	787	86.	.941
CARB	789	78.	.967

ODOMETER	47647
TEST MILES	2.850
TEST MINUTES	7.65
CALC. MILES/HR	22.35
COUNT RATIO	.997
AVE. COUNTS/MIN	272.3
CUB. FT./COUNT	.364
SCF AIR/MILE	94.8

LICENSE NO.	5239CK
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	4.10/ .00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	4/20/67
TIME	4.30
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.33 IN.
HUMIDITY	36 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.584
MILES/GALLON	11.3

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.62
DILUTION RATIO	3.593
EXH/AIR RATIO	.950
SCF EXH/MILE	90.0
MILES/GALLON	11.2

IDLE	
DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	20.5
RPM	480

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2340 PPMC	8386 PPMC	.0271	8409 PPMC	.0272
HC FID					
TOTAL	3789 PPMC	13579 PPMC	.0440	13616 PPMC	.0441
OLEFINS	1129 PPMC	4046 PPMC	.0131	4057 PPMC	.0131
AROMAT.	669 PPMC	2398 PPMC	.0066	2404 PPMC	.0067
PARAFS.	1991 PPMC	7135 PPMC	.0242	7155 PPMC	.0243
NOX	587 PPM	2104 PPM	.0226	2109 PPM	.0227
CO	.55 PCT	1.97 PCT	.1290	1.98 PCT	.1293
CO2	3.69 PCT	13.22 PCT	1.3597	13.26 PCT	1.3634
O2	.58 PCT	2.08 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 204-5

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	77.	.970
SAMP	805	110.	.871
CARR	809	90.	.929

ODOMETER	47683
TEST MILES	2.760
TEST MINUTES	7.76
CALC. MILES/HR	21.34
COUNT RATIO	.995
AVE. COUNTS/MIN	272.3
CUR. FT./COUNT	.364
SCF AIR/MILE	95.0

LICENSE NO.	5239CK
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	4.10/ .00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	4/21/67
TIME	10.00
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	62 F
PRESSURE	28.90 IN.
HUMIDITY	35 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.766
MILES/GALLON	10.5

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.41
DILUTION RATIO	3.766
EXH/AIR RATIO	.954
SCF EXH/MILE	90.6
MILES/GALLON	10.5

IDLE	
DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	20.2
RPM	490

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2470 PPMC	9302 PPMC	.0303	9302 PPMC	.0303
HC FID					
TOTAL	3907 PPMC	14714 PPMC	.0479	14714 PPMC	.0479
OLEFINS	1165 PPMC	4387 PPMC	.0143	4387 PPMC	.0143
AROMAT.	686 PPMC	2583 PPMC	.0072	2583 PPMC	.0072
PARAFS.	2056 PPMC	7743 PPMC	.0265	7743 PPMC	.0265
NOX	496 PPM	1868 PPM	.0202	1868 PPM	.0202
CO	.68 PCT	2.56 PCT	.1687	2.56 PCT	.1687
CO2	3.60 PCT	13.56 PCT	1.4030	13.56 PCT	1.4030
O2	.66 PCT	2.49 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.627 IS LOWER THAN 3.766 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 205-3

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	1500	73.	.983
SAMP	1063	77.	.970
CARB	1071	83.	.951

ODOMETER	21379
TEST MILES	2.600
TEST MINUTES	7.72
CALC. MILES/HR	20.21
COUNT RATIO	.993
AVE. COUNTS/MIN	275.6
CUB. FT./COUNT	.359
SCF AIR/MILE	138.1

LICENSE NO.	15M785
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	4M/
AXLE RATIO	6.33/8.81
CARB. NO.	F7
DIST. NO.	F7
AIR CL. NO.	F1

DATE	5/ 4/67
TIME	2.30
GVW, LB	18000
LOAD, LB	5800
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.55 IN.
HUMIDITY	36 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.430
MILES/GALLON	7.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.86
DILUTION RATIO	2.489
EXH/AIR RATIO	.965
SCF EXH/MILE	133.3
MILES/GALLON	7.5

IDLE

DWELL ANGLE	36
IGN. TIMING	-6.0
A/F RATIO	13.2
MAN. VAC.	18.0
RPM	525

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	57.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2020 PPMC	4909 PPMC	.0235	5028 PPMC	.0241
HC FID					
TOTAL	3496 PPMC	8496 PPMC	.0407	8701 PPMC	.0417
OLEFINS	1110 PPMC	2698 PPMC	.0129	2763 PPMC	.0132
AROMAT.	645 PPMC	1567 PPMC	.0065	1605 PPMC	.0067
PARAFS.	1741 PPMC	4231 PPMC	.0213	4333 PPMC	.0218
NOX	700 PPM	1701 PPM	.0271	1742 PPM	.0277
CO	1.55 PCT	3.77 PCT	.3649	3.86 PCT	.3738
CO2	4.89 PCT	11.88 PCT	1.8089	12.17 PCT	1.8526
O2	.56 PCT	1.36 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	164
3	169
4	165
5	162
6	164
7	0
8	0

2053 VAC. @ 25MPH = 11.5 @ 28MPH = 10

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 205-4

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	1500	80.	.960
SAMP	1052	83.	.951
CARB	1058	78.	.967

ODOMETER	21382
TEST MILES	2.640
TEST MINUTES	7.90
CALC. MILES/HR	20.05
COUNT RATIO	.994
AVE. COUNTS/MIN	275.6
CUB. FT./COUNT	.359
SCF AIR/MILE	136.5

LICENSE NO.	15M785
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	4M/
AXLE RATIO	6.33/8.81
CARB. NO.	F7
DIST. NO.	F7
AIR CL. NO.	F1

DATE	5/ 4/67
TIME	3.25
GVW, LB	18000
LOAD, LB	5800
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	57 F
PRESSURE	29.54 IN.
HUMIDITY	40 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.440
MILES/GALLON	7.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.85
DILUTION RATIO	2.509
EXH/AIR RATIO	.965
SCF EXH/MILE	131.8
MILES/GALLON	7.5

IDLE

DWELL ANGLE	36
IGN. TIMING	-6.0
A/F RATIO	13.2
MAN. VAC.	18.0
RPM	525

ROUTE	CD-3
TRAFFIC	

RPM/MPH

HIGH GEAR	57.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1950 PPMC	4758 PPMC	.0226	4892 PPMC	.0232
HC FID					
TOTAL	3457 PPMC	8436 PPMC	.0400	8673 PPMC	.0411
OLEFINS	1199 PPMC	2926 PPMC	.0139	3008 PPMC	.0142
AROMAT.	516 PPMC	1259 PPMC	.0050	1295 PPMC	.0051
PARAFS.	1742 PPMC	4251 PPMC	.0211	4370 PPMC	.0217
NOX	687 PPM	1676 PPM	.0264	1724 PPM	.0271
CO	1.54 PCT	3.76 PCT	.3601	3.86 PCT	.3702
CO2	4.85 PCT	11.83 PCT	1.7816	12.17 PCT	1.8316
O2	.53 PCT	1.29 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	164
3	169
4	165
5	162
6	164
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 206-3

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	4

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	80.	.960
SAMP	1252	92.	.923
CARB	1255	76.	.973

ODOMETER	36681
TEST MILES	2.300
TEST MINUTES	7.09
CALC. MILES/HR	19.46
COUNT RATIO	.998
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	186.4

LICENSE NO.	5205CD
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F9
DIST. NO.	F9
AIR CL. NO.	F4

DATE	5/ 9/67
TIME	2.00
GVW, LB	20000
LOAD, LB	4625
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	28.97 IN.
HUMIDITY	38 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.662
MILES/GALLON	5.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.61
DILUTION RATIO	2.850
EXH/AIR RATIO	.950
SCF EXH/MILE	177.1
MILES/GALLON	5.5

IDLE

DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	13.2
MAN. VAC.	18.0
RPM	525

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	4400 PPMC	11712 PPMC	.0746	12541 PPMC	.0799
HC FID					
TOTAL	5978 PPMC	18575 PPMC	.1183	19889 PPMC	.1267
OLEFINS	1219 PPMC	3245 PPMC	.0206	3474 PPMC	.0221
AROMAT.	1017 PPMC	2707 PPMC	.0133	2899 PPMC	.0143
PARAFS.	4742 PPMC	12623 PPMC	.0843	13516 PPMC	.0903
NOX	973 PPM	2590 PPM	.0548	2773 PPM	.0586
CO	.70 PCT	1.86 PCT	.2399	2.00 PCT	.2569
CO2	4.65 PCT	12.38 PCT	2.5036	13.25 PCT	2.6807
O2	.88 PCT	2.34 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	130
2	137
3	131
4	135
5	140
6	137
7	136
8	123

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 206-4

ROAD OPN. DETROIT
WT. CLASS 3
LOAD HALF
TRUCK MAKE FORD
FLOW ELEM. 4
TRUCK NUMBER 4

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	93.	.920
SAMP	1236	98.	.905
CARB	1258	71.	.990

ODOMETER	36686
TEST MILES	2.280
TEST MINUTES	7.03
CALC. MILES/HR	19.46
COUNT RATIO	.983
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	191.6

LICENSE NO.	5205CD
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F9
DIST. NO.	F9
AIR CL. NO.	F4

DATE	5/ 9/67
TIME	2.30
GVW, LB	20000
LOAD, LB	4625
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP. 61 F
PRESSURE 28.97 IN.
HUMIDITY 36 PCT

FROM NITROGEN COUNTS

DILUTION RATIO 2.645

MILES/GALLON 5.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO 13.66
DILUTION RATIO 2.914
EXH/AIR RATIO .949
SCF EXH/MILE 181.9
MILES/GALLON 5.4

IDLE
DWELL ANGLE 28
IGN. TIMING -10.0
A/F RATIO 13.2
MAN. VAC. 18.0
RPM 525

ROUTE CD-3
TRAFFIC

RPM/MPH
HIGH GEAR 52.90
ACTUAL .00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	4300 PPMC	11372 PPMC	.0744	12530 PPMC	.0819
HC FID					
TOTAL	6910 PPMC	18274 PPMC	.1195	20136 PPMC	.1317
OLEFINS	1219 PPMC	3224 PPMC	.0211	3552 PPMC	.0232
AROMAT.	1219 PPMC	3224 PPMC	.0173	3552 PPMC	.0191
PARAFS.	4472 PPMC	11826 PPMC	.0811	13031 PPMC	.0894
NOX	973 PPM	2573 PPM	.0559	2835 PPM	.0616
CO	.65 PCT	1.72 PCT	.2273	1.89 PCT	.2504
CO2	4.56 PCT	12.06 PCT	2.5051	13.29 PCT	2.7603
O2	.91 PCT	2.41 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	130
2	137
3	131
4	135
5	140
6	137
7	136
8	123

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 207-2

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	73.	.983
SAMP	989	78.	.967
CARB	987	80.	.960

ODOMETER	4444
TEST MILES	2.290
TEST MINUTES	6.94
CALC. MILES/HR	19.80
COUNT RATIO	1.002
AVE. COUNTS/MIN	275.1
CUB. FT./COUNT	.360
SCF AIR/MILE	144.5

LICENSE NO.	16M400
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	5/10/67
TIME	1.00
GVW, LB	19500
LOAD, LB	5675
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.3

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.20 IN.
HUMIDITY	34 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.057
MILES/GALLON	7.1

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.91
DILUTION RATIO	3.103
EXH/AIR RATIO	.964
SCF EXH/MILE	139.3
MILES/GALLON	7.0

IDLE	
DWELL ANGLE	30
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	18.0
RPM	500

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2030 PPMC	6205 PPMC	.0311	6299 PPMC	.0316
HC FID					
TOTAL	3710 PPMC	11340 PPMC	.0568	11512 PPMC	.0577
OLEFINS	861 PPMC	2632 PPMC	.0132	2672 PPMC	.0134
AROMAT.	570 PPMC	1742 PPMC	.0070	1769 PPMC	.0071
PARAFS.	2279 PPMC	6966 PPMC	.0366	7072 PPMC	.0372
NOX	587 PPM	1794 PPM	.0298	1821 PPM	.0303
CO	1.20 PCT	3.67 PCT	.3715	3.72 PCT	.3771
CO2	3.95 PCT	12.07 PCT	1.9211	12.26 PCT	1.9503
O2	.48 PCT	1.47 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	162
3	161
4	161
5	162
6	157
7	0
8	0

2072 VAC. @ 25MPH = 12.5 @ 28MPH = 11.5

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 207-3

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	COPR.
NITR	2000	82.	.954
SAMP	985	92.	.923
CARB	985	80.	.960

ODOMETER	4447
TEST MILES	2.270
TEST MINUTES	6.91
CALC. MILES/HR	19.71
COUNT RATIO	1.000
AVE. COUNTS/MIN	275.1
CUR. FT./COUNT	.360
SCF AIR/MILE	145.3

LICENSE NO.	16M400
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	5/10/67
TIME	2.00
GVW, LB	19500
LOAD, LB	5675
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.3

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.18 IN.
HUMIDITY	35 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.098
MILES/GALLON	7.0

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.86
DILUTION RATIO	3.098
EXH/AIR RATIO	.965
SCF EXH/MILE	140.3
MILES/GALLON	7.0

IDLE

DWELL ANGLE	30
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	18.0
RPM	500

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1920 PPMC	5949 PPMC	.0300	5949 PPMC	.0300
HC FID					
TOTAL	3618 PPMC	11210 PPMC	.0565	11210 PPMC	.0565
OLEFINS	804 PPMC	2491 PPMC	.0126	2491 PPMC	.0126
AROMAT.	535 PPMC	1658 PPMC	.0066	1658 PPMC	.0066
PARAFS.	2279 PPMC	7061 PPMC	.0374	7061 PPMC	.0374
NOX	560 PPM	1735 PPM	.0291	1735 PPM	.0291
CO	1.25 PCT	3.87 PCT	.3949	3.87 PCT	.3949
CO2	3.95 PCT	12.24 PCT	1.9607	12.24 PCT	1.9607
O2	.44 PCT	1.36 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	162
3	161
4	161
5	162
6	157
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.082 IS LOWER THAN 3.098 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 208-4

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	1600	78.	.967
SAMP	735	75.	.977
CAPB	738	80.	.960

ODOMETER	8443
TEST MILES	2.760
TEST MINUTES	8.07
CALC. MILES/HR	20.52
COUNT RATIO	.996
AVE. COUNTS/MIN	272.3
CUB. FT./COUNT	.364
SCF AIR/MILE	89.8

LICENSE NO.	16M370
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	4.57/ .00
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	5/15/67
TIME	10.45
GVW, LB	7500
LOAD, LB	1500
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	29.04 IN.
HUMIDITY	51 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.155
MILES/GALLON	11.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.80
DILUTION RATIO	3.248
EXH/AIR RATIO	.967
SCF EXH/MILE	86.8
MILES/GALLON	11.0

IDLE

DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.7
MAN. VAC.	18.0
RPM	525

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2680 PPMC	8456 PPMC	.0264	8705 PPMC	.0272
HC FID					
TOTAL	4599 PPMC	14510 PPMC	.0453	14938 PPMC	.0466
OLEFINS	867 PPMC	2735 PPMC	.0085	2816 PPMC	.0088
AROMAT.	333 PPMC	1051 PPMC	.0016	1082 PPMC	.0017
PARAFS.	3399 PPMC	10724 PPMC	.0351	11040 PPMC	.0362
NOX	307 PPM	969 PPM	.0100	997 PPM	.0103
CO	1.23 PCT	3.88 PCT	.2450	4.00 PCT	.2522
CO2	3.72 PCT	11.74 PCT	1.1641	12.08 PCT	1.1985
O2	.60 PCT	1.89 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	163
3	163
4	166
5	165
6	163
7	0
8	0

2084 VAC. & 29MPH CRUISE 16.9

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 208-5

ROAD OPN.	DETROIT			GAS TEMP.		ODOMETER	8452
WT. CLASS	2			.....		TEST MILES	2.760
LOAD	HALF		COUNT	DEG.	CORR.	TEST MINUTES	8.28
TRUCK MAKE	CHEV	NITR	1648	67.	1.003	CALC. MILES/HR	20.00
FLOW ELEM.	9	SAMP	780	85.	.945	COUNT RATIO	.994
TRUCK NUMBER	2	CARB	785	93.	.920	AVE. COUNTS/MIN	272.3
						CUB. FT./COUNT	.364
						SCF AIR/MILE	91.7

CHASSIS DYNAM.

LICENSE NO.	16M370	DATE	5/15/67
		TIME	1.40
MODEL YEAR	1966		
ENGINE TYPE	I-6	GVW, LB	7500
DISPLACEMENT	292	LOAD, LB	1500
TRANSMISSION	4M/	PER CENT LOAD	50
AXLE RATIO	4.57/ .00		
CARB. NO.	C4	MAXIMUM BHP	170
DIST. NO.	C4	CL.MASK, SQ. IN.	4.9
AIR CL. NO.	C3	PCV, CFM	2.0

	FROM NITROGEN COUNTS	FROM CO/CO2 CALCN.
AMBIENT CONDITIONS		AIR/FUEL RATIO 12.56
	DILUTION RATIO 3.244	DILUTION RATIO 3.244
TEMP. 63 F		EXH/AIR RATIO .972
PRESSURE 29.04 IN.		SCF EXH/MILE 89.1
HUMIDITY 36 PCT	MILES/GALLON 10.5	MILES/GALLON 10.5

IDLE		ROUTE	CD-2
DWELL ANGLE	32	TRAFFIC	
IGN. TIMING	-4.0		
A/F RATIO	12.7	RPM/MPH	
MAN. VAC.	18.0	HIGH GEAR	46.90
RPM	525	ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2470 PPMC	8014 PPMC	.0257	8014 PPMC	.0257
HC FID					
TOTAL	4399 PPMC	14273 PPMC	.0457	14273 PPMC	.0457
OLEFINS	667 PPMC	2164 PPMC	.0069	2164 PPMC	.0069
AROMAT.	333 PPMC	1080 PPMC	.0017	1080 PPMC	.0017
PARAFS.	3399 PPMC	11028 PPMC	.0371	11028 PPMC	.0371
NOX	260 PPM	844 PPM	.0090	844 PPM	.0090
CO	1.44 PCT	4.67 PCT	.3028	4.67 PCT	.3028
CO2	3.65 PCT	11.84 PCT	1.2057	11.84 PCT	1.2057
O2	.84 PCT	2.73 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	163
3	163
4	166
5	165
6	163
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.202 IS LOWER THAN 3.244 FROM NITROGEN COUNTS

2085 VAC. @ 29MPH CRUISE 16.8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 209-1

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	74.	.980
SAMP	1109	80.	.960
CARB	1103	96.	.911

ODOMETER	40672
TEST MILES	2.010
TEST MINUTES	6.18
CALC. MILES/HR	19.51
COUNT RATIO	1.005
AVE. COUNTS/MIN	275.0
CUB. FT./COUNT	.360
SCF AIR/MILE	174.6

LICENSE NO.	900203
MODEL YEAR	1962
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.14/8.81
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	5/17/67
TIME	2.45
GVW, LB	21000
LOAD, LB	6550
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	61 F
PRESSURE	29.24 IN.
HUMIDITY	42 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.840
MILES/GALLON	6.4

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.33
DILUTION RATIO	2.972
EXH/AIR RATIO	.955
SCF EXH/MILE	166.8
MILES/GALLON	6.1

IDLE	
DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.5
MAN. VAC.	18.5
RPM	525

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	53.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1390 PPMC	3948 PPMC	.0237	4131 PPMC	.0248
HC FID					
TOTAL	2642 PPMC	7503 PPMC	.0450	7852 PPMC	.0471
OLEFINS	485 PPMC	1377 PPMC	.0083	1441 PPMC	.0086
AROMAT.	270 PPMC	767 PPMC	.0030	802 PPMC	.0032
PARAFS.	1887 PPMC	5359 PPMC	.0337	5608 PPMC	.0353
NOX	407 PPM	1156 PPM	.0230	1210 PPM	.0241
CO	.90 PCT	2.56 PCT	.3099	2.67 PCT	.3243
CO2	4.35 PCT	12.35 PCT	2.3534	12.93 PCT	2.4628
O2	.65 PCT	1.85 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	147
2	131
3	136
4	140
5	139
6	132
7	148
8	140

2091 VAC. @ 21MPH = 8.1 @ 24MPH = 6.4

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 209-2

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	80.	.960
SAMP	1034	85.	.945
CARB	1029	96.	.911

ODOMETER	40677
TEST MILES	1.950
TEST MINUTES	6.09
CALC. MILES/HR	19.21
COUNT RATIO	1.005
AVE. COUNTS/MIN	275.0
CUB. FT./COUNT	.360
SCF AIR/MILE	167.8

LICENSE NO.	900203
MODEL YEAR	1962
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.14/8.81
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	5/17/67
TIME	3.30
GVW. LB	21000
LOAD. LB	6550
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK. SQ. IN.	.0
PCV. CFM	.0

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	29.22 IN.
HUMIDITY	44 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.967
MILES/GALLON	6.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.33
DILUTION RATIO	3.000
EXH/AIR RATIO	.955
SCF EXH/MILE	160.3
MILES/GALLON	6.4

IDLE

DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	525

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	53.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1270 PPMC	3768 PPMC	.0217	3810 PPMC	.0220
HC FID					
TOTAL	2412 PPMC	7155 PPMC	.0413	7237 PPMC	.0417
OLEFINS	469 PPMC	1391 PPMC	.0080	1407 PPMC	.0081
AROMAT.	335 PPMC	994 PPMC	.0044	1005 PPMC	.0044
PARAFS.	1608 PPMC	4770 PPMC	.0289	4824 PPMC	.0292
NOX	440 PPM	1305 PPM	.0250	1320 PPM	.0253
CO	.89 PCT	2.64 PCT	.3078	2.67 PCT	.3113
CO2	4.31 PCT	12.79 PCT	2.3416	12.93 PCT	2.3681
O2	.72 PCT	2.14 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	147
2	131
3	136
4	140
5	139
6	132
7	148
8	140

2092 VAC. @ 21MPH = 8.6 @ 24MPH = 6.8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 210-4

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	89.	.932
SAMP	1649	84.	.948
CARB	1634	94.	.917

ODOMETER	35269
TEST MILES	2.200
TEST MINUTES	6.76
CALC. MILES/HR	19.53
COUNT RATIO	1.009
AVE. COUNTS/MIN	275.1
CUB. FT./COUNT	.360
SCF AIR/MILE	239.6

LICENSE NO.	15M673
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	477
TRANSMISSION	5M/
AXLE RATIO	7.20/ .00
CARB. NO.	F12
DIST. NO.	F12
AIR CL. NO.	F4

DATE	5/23/67
TIME	10.15
GVW, LB	41000
LOAD, LB	12000
PER CENT LOAD	50
MAXIMUM BHP	222
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	29.44 IN.
HUMIDITY	38 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.491
MILES/GALLON	5.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.97
DILUTION RATIO	2.687
EXH/AIR RATIO	.943
SCF EXH/MILE	226.0
MILES/GALLON	4.8

IDLE

DWELL ANGLE	27
IGN. TIMING	-8.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	[illegible]

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	48.40
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1610 PPMC	4011 PPMC	.0326	4326 PPMC	.0352
HC FID					
TOTAL	2936 PPMC	7314 PPMC	.0595	7889 PPMC	.0641
OLEFINS	522 PPMC	1300 PPMC	.0106	1403 PPMC	.0114
AROMAT.	130 PPMC	324 PPMC	.0004	349 PPMC	.0004
PARAFS.	2284 PPMC	5690 PPMC	.0485	6137 PPMC	.0523
NOX	840 PPM	2093 PPM	.0565	2257 PPM	.0609
CO	.52 PCT	1.30 PCT	.2129	1.40 PCT	.2296
CO2	5.00 PCT	12.46 PCT	3.2159	13.43 PCT	3.4684
O2	.90 PCT	2.24 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	159
2	150
3	152
4	153
5	144
6	151
7	150
8	156

2104 VAC. @ 21MPH = 13.5 @ 24MPH = 12.5

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 210-5

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	81.	.957
SAMP	1667	80.	.960
CARB	1666	89.	.932

ODOMETER	35272
TEST MILES	2.250
TEST MINUTES	6.90
CALC. MILES/HR	19.57
COUNT RATIO	1.001
AVE. COUNTS/MIN	275.1
CUR. FT./COUNT	.360
SCF AIR/MILE	243.0

LICENSE NO.	15M673
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	477
TRANSMISSION	5M/
AXLE RATIO	7.20/ .00
CARB. NO.	F12
DIST. NO.	F12
AIR CL. NO.	F4

DATE	5/23/67
TIME	11.10
GVW, LB	41000
LOAD, LB	12000
PER CENT LOAD	50
MAXIMUM BHP	222
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	55 F
PRESSURE	29.43 IN.
HUMIDITY	52 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.495
MILES/GALLON	5.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.06
DILUTION RATIO	2.640
EXH/AIR RATIO	.942
SCF EXH/MILE	228.8
MILES/GALLON	4.7

IDLE

DWELL ANGLE	27
IGN. TIMING	-8.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	550

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	48.40
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1470 PPMC	3667 PPMC	.0302	3880 PPMC	.0319
HC FID					
TOTAL	2910 PPMC	7260 PPMC	.0597	7681 PPMC	.0632
OLEFINS	458 PPMC	1143 PPMC	.0094	1209 PPMC	.0099
AROMAT.	197 PPMC	491 PPMC	.0018	520 PPMC	.0019
PARAFS.	2255 PPMC	5626 PPMC	.0486	5952 PPMC	.0514
NOX	867 PPM	2163 PPM	.0591	2288 PPM	.0625
CO	.49 PCT	1.22 PCT	.2034	1.29 PCT	.2152
CO2	5.10 PCT	12.72 PCT	3.3254	13.46 PCT	3.5185
O2	.81 PCT	2.02 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	159
2	150
3	152
4	153
5	144
6	151
7	150
8	156

2105 VAC. @ 21MPH = 13.5 @ 24MPH = 12.4

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 211-1

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	70.	.993
SAMP	1495	70.	.993
CARB	1490	111.	.869

ODOMETER	5149
TEST MILES	2.420
TEST MINUTES	7.21
CALC. MILES/HR	20.14
COUNT RATIO	1.003
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	188.7

LICENSE NO.	15M791
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	6.50/ .00
CARB. NO.	F10
DIST. NO.	F10
AIR CL. NO.	F4

DATE	5/22/67
TIME	4.00
GVW, LB	25500
LOAD, LB	7250
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	55 F
PRESSURE	29.32 IN.
HUMIDITY	40 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.672
MILES/GALLON	5.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.43
DILUTION RATIO	2.754
EXH/AIR RATIO	.953
SCF EXH/MILE	179.9
MILES/GALLON	5.6

IDLE

DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	12.9
MAN. VAC.	19.0
RPM	550

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2710 PPMC	7242 PPMC	.0469	7462 PPMC	.0483
HC FID					
TOTAL	4221 PPMC	11280 PPMC	.0730	11623 PPMC	.0752
OLEFINS	812 PPMC	2170 PPMC	.0140	2236 PPMC	.0145
AROMAT.	1429 PPMC	3819 PPMC	.0230	3935 PPMC	.0237
PARAFS.	1980 PPMC	5291 PPMC	.0359	5452 PPMC	.0370
NOX	960 PPM	2565 PPM	.0551	2643 PPM	.0568
CO	.88 PCT	2.35 PCT	.3076	2.42 PCT	.3170
CO2	4.75 PCT	12.69 PCT	2.6087	13.08 PCT	2.6882
O2	.54 PCT	1.44 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	148
2	156
3	154
4	149
5	148
6	153
7	154
8	147

2111 VAC. @ 21MPH = 11.8 @ 24MPH = 10.6

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 211-5

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2700	74.	.980
SAMP	1407	78.	.967
CARB	1405	112.	.866

ODOMETER	5182
TEST MILES	2.290
TEST MINUTES	7.00
CALC. MILES/HR	19.63
COUNT RATIO	1.001
AVE. COUNTS/MIN	276.5
CUR. FT./COUNT	.358
SCF AIR/MILE	185.3

LICENSE NO.	15M791
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	6.50/ .00
CARB. NO.	F10
DIST. NO.	F10
AIR CL. NO.	F4

DATE	6/ 5/67
TIME	12.45
GVW, LB	25500
LOAD, LB	7250
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.42 IN.
HUMIDITY	51 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.945
MILES/GALLON	5.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.56
DILUTION RATIO	2.945
EXH/AIR RATIO	.951
SCF EXH/MILE	176.2
MILES/GALLON	5.8

IDLE

DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	12.9
MAN. VAC.	20.0
RPM	575

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2200 PPMC	6479 PPMC	.0411	6479 PPMC	.0411
HC FID					
TOTAL	3658 PPMC	10773 PPMC	.0683	10773 PPMC	.0683
OLEFINS	785 PPMC	2312 PPMC	.0146	2312 PPMC	.0146
AROMAT.	1247 PPMC	3672 PPMC	.0218	3672 PPMC	.0218
PARAFS.	1626 PPMC	4788 PPMC	.0318	4788 PPMC	.0318
NOX	920 PPM	2709 PPM	.0570	2709 PPM	.0570
CO	.72 PCT	2.12 PCT	.2717	2.12 PCT	.2717
CO2	4.50 PCT	13.25 PCT	2.6678	13.25 PCT	2.6678
O2	.32 PCT	.94 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	148
2	156
3	154
4	149
5	148
6	153
7	154
8	147

DIL. RATIO FROM CO/CO2 CALCN. = 2.936 IS LOWER THAN 2.945 FROM NITROGEN COUNTS

2115 VAC. @ 21MPH = 12.5 @ 24MPH = 11.1

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 212-2

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2001	80.	.960
SAMP	1191	87.	.938
CARB	1193	94.	.917

ODOMETER	39242
TEST MILES	2.570
TEST MINUTES	7.66
CALC. MILES/HR	20.13
COUNT RATIO	.998
AVE. COUNTS/MIN	276.5
CUB. FT./COUNT	.358
SCF AIR/MILE	149.7

LICENSE NO.	5220CD
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	4M/
AXLE RATIO	6.50/8.85
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	6/ 1/67
TIME	10.15
GVW, LB	19500
LOAD, LB	4000
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	57 F
PRESSURE	29.60 IN.
HUMIDITY	45 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.720
MILES/GALLON	7.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.51
DILUTION RATIO	2.773
EXH/AIR RATIO	.952
SCF EXH/MILE	142.5
MILES/GALLON	7.3

IDLE

DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	13.1
MAN. VAC.	17.5
RPM	550

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	51.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1690 PPMC	4596 PPMC	.0236	4686 PPMC	.0240
HC FID					
TOTAL	3095 PPMC	8417 PPMC	.0431	8582 PPMC	.0440
OLEFINS	911 PPMC	2477 PPMC	.0127	2526 PPMC	.0129
AROMAT.	871 PPMC	2369 PPMC	.0113	2415 PPMC	.0115
PARAFS.	1313 PPMC	3571 PPMC	.0192	3641 PPMC	.0196
NOX	973 PPM	2646 PPM	.0450	2698 PPM	.0459
CO	.80 PCT	2.18 PCT	.2254	2.22 PCT	.2298
CO2	4.75 PCT	12.92 PCT	2.1027	13.17 PCT	2.1441
O2	.49 PCT	1.33 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	167
2	162
3	160
4	165
5	158
6	163
7	0
8	0

2122 VAC. @ 25MPH = 11.7 @ 28MPH = 10.7

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 212-3

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	GVC
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	80.	.960
SAMP	1125	80.	.960
CARB	1125	85.	.945

ODOMETER	39244
TEST MILES	2.580
TEST MINUTES	7.83
CALC. MILES/HR	19.77
COUNT RATIO	1.000
AVE. COUNTS/MIN	276.5
CUB. FT./COUNT	.358
SCF AIR/MILE	144.7

LICENSE NO.	5220CD
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	4M/
AXLE RATIO	6.50/8.85
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	6/ 1/67
TIME	11.15
GVW, LB	19500
LOAD, LB	4000
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	57 F
PRESSURE	29.58 IN.
HUMIDITY	47 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.222
MILES/GALLON	7.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.64
DILUTION RATIO	3.278
EXH/AIR RATIO	.949
SCF EXH/MILE	137.4
MILES/GALLON	7.6

IDLE	
DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	13.1
MAN. VAC.	17.5
RPM	550

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	51.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1565 PPMC	5043 PPMC	.0249	5130 PPMC	.0253
HC FID					
TOTAL	2747 PPMC	8851 PPMC	.0437	9004 PPMC	.0445
OLEFINS	750 PPMC	2417 PPMC	.0119	2458 PPMC	.0121
AROMAT.	764 PPMC	2462 PPMC	.0112	2504 PPMC	.0114
PARAFS.	1233 PPMC	3973 PPMC	.0206	4041 PPMC	.0209
NOX	760 PPM	2449 PPM	.0402	2491 PPM	.0409
CO	.59 PCT	1.90 PCT	.1899	1.93 PCT	.1932
CO2	4.05 PCT	13.05 PCT	2.0479	13.27 PCT	2.0831
O2	.52 PCT	1.68 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	167
2	162
3	160
4	165
5	158
6	163
7	0
8	0

2123 VAC. @ 25MPH = 12.0 @ 28MPH = 11.8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 213-2

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	75.	.977
SAMP	844	79.	.964
CARB	835	70.	.993

ODOMETER	40135
TEST MILES	2.710
TEST MINUTES	8.03
CALC. MILES/HR	20.25
COUNT RATIO	1.011
AVE. COUNTS/MIN	271.7
CUB. FT./COUNT	.364
SCF AIR/MILE	108.5

LICENSE NO.	7034CN
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	4M/
AXLE RATIO	5.87/ .00
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	5/26/67
TIME	2.30
GVW, LB	10000
LOAD, LB	2420
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	6.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	65 F
PRESSURE	29.32 IN.
HUMIDITY	35 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.402
MILES/GALLON	9.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.14
DILUTION RATIO	3.422
EXH/AIR RATIO	.959
SCF EXH/MILE	104.0
MILES/GALLON	9.3

IDLE

DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	20.0
RPM	560

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	57.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2660 PPMC	9048 PPMC	.0338	9101 PPMC	.0340
HC FID					
TOTAL	4481 PPMC	15243 PPMC	.0570	15332 PPMC	.0574
OLEFINS	1054 PPMC	3585 PPMC	.0134	3606 PPMC	.0135
AROMAT.	1213 PPMC	4126 PPMC	.0141	4150 PPMC	.0141
PARAFS.	2214 PPMC	7531 PPMC	.0296	7575 PPMC	.0297
NOX	473 PPM	1609 PPM	.0200	1618 PPM	.0201
CO	.92 PCT	3.13 PCT	.2367	3.15 PCT	.2381
CO2	3.69 PCT	12.55 PCT	1.4915	12.63 PCT	1.5002
O2	.67 PCT	2.28 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	168
3	165
4	163
5	163
6	165
7	168
8	160

2132 VAC. @ 29MPH = 18.3

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 213-8

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2001	90.	.929
SAMP	782	90.	.929
CARB	788	64.	1.014

ODOMETER	40185
TEST MILES	2.570
TEST MINUTES	7.73
CALC. MILES/HR	19.95
COUNT RATIO	.992
AVE. COUNTS/MIN	267.1
CUB. FT./COUNT	.371
SCF AIR/MILE	112.9

LICENSE NO.	7034CN
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	4M/
AXLE RATIO	5.87/ .00
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	6/ 2/67
TIME	10.00
GVW, LB	10000
LOAD, LB	2420
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	6.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	29.54 IN.
HUMIDITY	46 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.559
MILES/GALLON	9.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.12
DILUTION RATIO	3.597
EXH/AIR RATIO	.960
SCF EXH/MILE	108.3
MILES/GALLON	8.9

IDLE

DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	20.0
RPM	500

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	57.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2760 PPMC	9822 PPMC	.0383	9929 PPMC	.0387
HC FID					
TOTAL	4543 PPMC	16168 PPMC	.0630	16343 PPMC	.0637
OLEFINS	1038 PPMC	3694 PPMC	.0144	3734 PPMC	.0145
AROMAT.	1259 PPMC	4481 PPMC	.0159	4529 PPMC	.0161
PARAFS.	2246 PPMC	7993 PPMC	.0327	8080 PPMC	.0330
NOX	439 PPM	1562 PPM	.0202	1579 PPM	.0204
CO	.89 PCT	3.17 PCT	.2494	3.20 PCT	.2521
CO2	3.50 PCT	12.46 PCT	1.5410	12.59 PCT	1.5577
O2	.71 PCT	2.53 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	168
3	165
4	163
5	163
6	165
7	168
8	160

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 214-2

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	70.	.993
SAMP	734	73.	.983
CARB	746	74.	.980

ODOMETER	5538
TEST MILES	2.610
TEST MINUTES	7.80
CALC. MILES/HR	20.08
COUNT RATIO	.984
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	100.4

LICENSE NO.	15M787
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	300
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F5
DIST. NO.	F5
AIR CL. NO.	F1

DATE	6/ 6/67
TIME	3.30
GVW, LB	7500
LOAD, LB	1775
PER CENT LOAD	50
MAXIMUM BHP	150
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	64 F
PRESSURE	29.24 IN.
HUMIDITY	52 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.753
MILES/GALLON	9.9

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.03
DILUTION RATIO	3.753
EXH/AIR RATIO	.962
SCF EXH/MILE	96.5
MILES/GALLON	9.9

IDLE	
DWELL ANGLE	37
IGN. TIMING	-6.0
A/F RATIO	12.3
MAN. VAC.	18.0
RPM	500

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1795 PPMC	6736 PPMC	.0234	6736 PPMC	.0234
HC FID					
TOTAL	3318 PPMC	12451 PPMC	.0432	12451 PPMC	.0432
OLEFINS	919 PPMC	3449 PPMC	.0120	3449 PPMC	.0120
AROMAT.	973 PPMC	3651 PPMC	.0118	3651 PPMC	.0118
PARAFS.	1426 PPMC	5351 PPMC	.0195	5351 PPMC	.0195
NOX	333 PPM	1250 PPM	.0144	1250 PPM	.0144
CO	.94 PCT	3.53 PCT	.2476	3.53 PCT	.2476
CO2	3.42 PCT	12.83 PCT	1.4151	12.83 PCT	1.4151
O2	.41 PCT	1.54 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	169
2	166
3	182
4	166
5	167
6	162
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.640 IS LOWER THAN 3.753 FROM NITROGEN COUNTS

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 214-3

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	81.	.957
SAMP	714	83.	.951
CARB	717	72.	.987

ODOMETER	5546
TEST MILES	2.550
TEST MINUTES	7.72
CALC. MILES/HR	19.82
COUNT RATIO	.996
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	99.5

LICENSE NO.	15M787
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	300
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F5
DIST. NO.	F5
AIR CL. NO.	F1

DATE	6/ 6/67
TIME	4.30
GVW, LB	7500
LOAD, LB	1775
PER CENT LOAD	50
MAXIMUM BHP	150
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.24 IN.
HUMIDITY	56 PCT

FROM NITROGEN COUNTS		FROM CO/CO2 CALCN.	
		AIR/FUEL RATIO	13.07
DILUTION RATIO	3.820	DILUTION RATIO	3.820
		EXH/AIR RATIO	.961
		SCF EXH/MILE	95.6
MILES/GALLON	9.9	MILES/GALLON	9.9

IDLE	
DWELL ANGLE	37
IGN. TIMING	-6.0
A/F RATIO	12.3
MAN. VAC.	18.0
RPM	500

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1805 PPMC	6895 PPMC	.0237	6895 PPMC	.0237
HC FID					
TOTAL	3386 PPMC	12934 PPMC	.0445	12934 PPMC	.0445
OLEFINS	946 PPMC	3614 PPMC	.0124	3614 PPMC	.0124
AROMAT.	1000 PPMC	3820 PPMC	.0122	3820 PPMC	.0122
PARAFS.	1440 PPMC	5500 PPMC	.0198	5500 PPMC	.0198
NOX	320 PPM	1222 PPM	.0140	1222 PPM	.0140
CO	.90 PCT	3.44 PCT	.2390	3.44 PCT	.2390
CO2	3.40 PCT	12.99 PCT	1.4184	12.99 PCT	1.4184
O2	.40 PCT	1.53 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	169
2	166
3	182
4	166
5	167
6	162
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.682 IS LOWER THAN 3.820 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 215-1

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	75.	.977
SAMP	1035	77.	.970
CARB	1027	81.	.957

ODOMETER	21800
TEST MILES	2.710
TEST MINUTES	8.11
CALC. MILES/HR	20.05
COUNT RATIO	1.008
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	126.5

LICENSE NO.	16M851
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	7.17/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C1

DATE	6/ 7/67
TIME	3.45
GVW, LB	16000
LOAD, LB	4850
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.15 IN.
HUMIDITY	71 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.945
MILES/GALLON	7.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.25
DILUTION RATIO	2.945
EXH/AIR RATIO	.980
SCF EXH/MILE	123.9
MILES/GALLON	7.6

IDLE	
DWELL ANGLE	35
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	17.0
RPM	450

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	62.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2025 PPMC	5964 PPMC	.0266	5964 PPMC	.0266
HC FID					
TOTAL	3428 PPMC	10097 PPMC	.0450	10097 PPMC	.0450
OLEFINS	823 PPMC	2424 PPMC	.0108	2424 PPMC	.0108
AROMAT.	1069 PPMC	3149 PPMC	.0131	3149 PPMC	.0131
PARAFS.	1536 PPMC	4524 PPMC	.0211	4524 PPMC	.0211
NOX	340 PPM	1001 PPM	.0148	1001 PPM	.0148
CO	1.84 PCT	5.42 PCT	.4882	5.42 PCT	.4882
CO2	3.84 PCT	11.31 PCT	1.6006	11.31 PCT	1.6006
O2	.45 PCT	1.33 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	175
3	181
4	183
5	173
6	154
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.918 IS LOWER THAN 2.945 FROM NITROGEN COUNTS

2151 VAC. @ 28MPH = 9.3 @ 25MPH = 11.2

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 215-4

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	84.	.948
SAMP	1023	94.	.917
CARB	1029	80.	.960

ODOMETER	21815
TEST MILES	2.730
TEST MINUTES	8.18
CALC. MILES/HR	20.02
COUNT RATIO	.994
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	126.3

LICENSE NO.	16M851
MODEL YEAR	1967
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	7.17/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C1

DATE	6/ 8/67
TIME	11.45
GVW, LB	16000
LOAD, LB	4850
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.16 IN.
HUMIDITY	69 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.020
MILES/GALLON	7.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.27
DILUTION RATIO	3.020
EXH/AIR RATIO	.979
SCF EXH/MILE	123.7
MILES/GALLON	7.5

IDLE	
DWELL ANGLE	35
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	17.0
RPM	450
ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	62.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2065 PPMC	6237 PPMC	.0277	6237 PPMC	.0277
HC FID					
TOTAL	3565 PPMC	10767 PPMC	.0479	10767 PPMC	.0479
OLEFINS	768 PPMC	2320 PPMC	.0103	2320 PPMC	.0103
AROMAT.	1152 PPMC	3479 PPMC	.0144	3479 PPMC	.0144
PARAFS.	1645 PPMC	4968 PPMC	.0232	4968 PPMC	.0232
NOX	352 PPM	1063 PPM	.0157	1063 PPM	.0157
CO	1.81 PCT	5.47 PCT	.4915	5.47 PCT	.4915
CO2	3.82 PCT	11.54 PCT	1.6297	11.54 PCT	1.6297
O2	.39 PCT	1.18 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	175
3	181
4	183
5	173
6	154
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.941 IS LOWER THAN 3.020 FROM NITROGEN COUNTS

2154 VAC. @ 25MPH = 11.5 @ 28MPH = 9.5

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 216-2

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2800	79.	.964
SAMP	1555	85.	.945
CARB	1540	111.	.869

ODOMETER	5247
TEST MILES	2.380
TEST MINUTES	7.31
CALC. MILES/HR	19.53
COUNT RATIO	1.010
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	196.2

LICENSE NO.	12M917
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	391
TRANSMISSION	5M/
AXLE RATIO	6.65/9.13
CARB. NO.	F11
DIST. NO.	F11
AIR CL. NO.	F4

DATE	6/ 7/67
TIME	1.00
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	2.1

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.20 IN.
HUMIDITY	71 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.837
MILES/GALLON	5.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.19
DILUTION RATIO	2.875
EXH/AIR RATIO	.958
SCF EXH/MILE	188.0
MILES/GALLON	5.2

IDLE

DWELL ANGLE	25
IGN. TIMING	-8.0
A/F RATIO	12.0
MAN. VAC.	17.0
RPM	560

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	55.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3205 PPMC	9092 PPMC	.0615	9215 PPMC	.0623
HC FID					
TOTAL	4907 PPMC	13921 PPMC	.0941	14108 PPMC	.0954
OLEFINS	791 PPMC	2244 PPMC	.0152	2274 PPMC	.0154
AROMAT.	1567 PPMC	4445 PPMC	.0277	4505 PPMC	.0280
PARAFS.	2549 PPMC	7231 PPMC	.0513	7329 PPMC	.0520
NOX	587 PPM	1665 PPM	.0374	1688 PPM	.0379
CO	1.05 PCT	2.98 PCT	.4071	3.02 PCT	.4126
CO2	4.42 PCT	12.54 PCT	2.6924	12.71 PCT	2.7286
O2	.42 PCT	1.19 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	162
2	160
3	161
4	162
5	165
6	160
7	155
8	157

2162 VAC. @ 21MPH = 11.5 @ 24MPH = 12.5

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 216-3

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	4
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2800	86.	.941
SAMP	1555	88.	.935
CARB	1547	113.	.863

ODOMETER	5251
TEST MILES	2.430
TEST MINUTES	7.40
CALC. MILES/HR	19.70
COUNT RATIO	1.005
AVE. COUNTS/MIN	273.2
CUB. FT./COUNT	.362
SCF AIR/MILE	191.8

LICENSE NO.	12M917
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	391
TRANSMISSION	5M/
AXLE RATIO	6.65/9.13
CARB. NO.	11
DIST. NO.	11
AIR CL. NO.	F4

DATE	6/ 7/67
TIME	1.35
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	2.1

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.18 IN.
HUMIDITY	69 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.813
MILES/GALLON	5.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.18
DILUTION RATIO	2.820
EXH/AIR RATIO	.958
SCF EXH/MILE	183.8
MILES/GALLON	5.4

IDLE

DWELL ANGLE	25
IGN. TIMING	-8.0
A/F RATIO	12.0
MAN. VAC.	17.0
RPM	560

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	55.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	3050 PPMC	8578 PPMC	.0567	8601 PPMC	.0568
HC FID					
TOTAL	4634 PPMC	13033 PPMC	.0861	13069 PPMC	.0864
OLEFINS	681 PPMC	1915 PPMC	.0126	1921 PPMC	.0127
AROMAT.	1500 PPMC	4219 PPMC	.0257	4230 PPMC	.0257
PARAFS.	2453 PPMC	6899 PPMC	.0478	6918 PPMC	.0480
NOX	633 PPM	1760 PPM	.0391	1785 PPM	.0392
CO	1.08 PCT	3.04 PCT	.4058	3.05 PCT	.4069
CO2	4.50 PCT	12.66 PCT	2.6567	12.69 PCT	2.6639
O2	.45 PCT	1.27 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	162
2	160
3	161
4	162
5	165
6	160
7	155
8	157

2163 VAC. @ 21MPH = 11.5 @ 24MPH = 12.5

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 217-1

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2500	90.	.929
SAMP	1668	88.	.935
CARB	1671	99.	.902

ODOMETER	12419
TEST MILES	2.590
TEST MINUTES	7.75
CALC. MILES/HR	20.05
COUNT RATIO	.998
AVE. COUNTS/MIN	276.5
CUB. FT./COUNT	.358
SCF AIR/MILE	200.8

LICENSE NO.	4267CK
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	6.71/9.14
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	6/ 8/67
TIME	3.15
GVW, LB	32000
LOAD, LB	10000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.14 IN.
HUMIDITY	65 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.489
MILES/GALLON	5.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.95
DILUTION RATIO	2.548
EXH/AIR RATIO	.944
SCF EXH/MILE	189.4
MILES/GALLON	5.8

IDLE

DWELL ANGLE	32
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	18.6
RPM	525

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1165 PPMC	2900 PPMC	.0198	2968 PPMC	.0202
HC FID					
TOTAL	2194 PPMC	5461 PPMC	.0372	5590 PPMC	.0381
OLEFINS	549 PPMC	1366 PPMC	.0093	1399 PPMC	.0095
AROMAT.	781 PPMC	1944 PPMC	.0125	1990 PPMC	.0128
PARAFS.	864 PPMC	2151 PPMC	.0154	2201 PPMC	.0157
NOX	793 PPM	1974 PPM	.0446	2020 PPM	.0457
CO	.56 PCT	1.39 PCT	.1920	1.43 PCT	.1965
CO2	5.27 PCT	13.12 PCT	2.8381	13.43 PCT	2.9052
O2	.74 PCT	1.84 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	154
3	162
4	150
5	155
6	144
7	158
8	151

2171 VAC. @ 21MPH = 12.6 @ 24MPH = 11.6

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 217-2

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2504	91.	.926
SAMP	1563	87.	.938
CARB	1562	105.	.885

ODOMETER	12424
TEST MILES	2.440
TEST MINUTES	7.39
CALC. MILES/HR	19.81
COUNT RATIO	1.001
AVE. COUNTS/MIN	276.5
CUB. FT./COUNT	.358
SCF AIR/MILE	195.3

LICENSE NO.	4267CK
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	6.71/9.14
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	6/ 8/67
TIME	4.15
GVW, LB	32000
LOAD, LB	10000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.14 IN.
HUMIDITY	67 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.581
MILES/GALLON	6.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.07
DILUTION RATIO	2.677
EXH/AIR RATIO	.941
SCF EXH/MILE	183.9
MILES/GALLON	6.0

IDLE

DWELL ANGLE	32
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	18.6
RPM	525

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1190 PPMC	3072 PPMC	.0293	3185 PPMC	.0211
HC FID					
TOTAL	2205 PPMC	5691 PPMC	.0376	5902 PPMC	.0390
OLEFINS	551 PPMC	1422 PPMC	.0094	1475 PPMC	.0097
AROMAT.	745 PPMC	1923 PPMC	.0120	1994 PPMC	.0124
PARAFS.	909 PPMC	2346 PPMC	.0163	2433 PPMC	.0169
NOX	787 PPM	2031 PPM	.0446	2107 PPM	.0463
CO	.48 PCT	1.24 PCT	.1656	1.28 PCT	.1718
CO2	5.03 PCT	12.98 PCT	2.7272	13.46 PCT	2.8282
O2	.72 PCT	1.86 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	154
3	162
4	150
5	155
6	144
7	158
8	151

2172 VAC. @ 21MPH = 12.8 @ 24MPH = 11.8

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 218-1

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2500	86.	.941
SAMP	1735	90.	.929
CARB	1727	142.	.790

ODOMETER	34900
TEST MILES	2.610
TEST MINUTES	7.71
CALC. MILES/HR	20.31
COUNT RATIO	1.005
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	184.0

LICENSE NO.	5223CD
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	450
TRANSMISSION	5M/
AXLE RATIO	7.17/ .00
CARB. NO.	I4
DIST. NO.	I4
AIR CL. NO.	I3

DATE	3/12/67
TIME	4.30
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	1.5

AMBIENT CONDITIONS

TEMP.	75 F
PRESSURE	29.23 IN.
HUMIDITY	55 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.460
MILES/GALLON	6.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.03
DILUTION RATIO	2.544
EXH/AIR RATIO	.962
SCF EXH/MILE	177.0
MILES/GALLON	5.8

IDLE

DWELL ANGLE	30
IGN. TIMING	-5.0
A/F RATIO	12.2
MAN. VAC.	20.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.60
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	730 PPMC	1796 PPMC	.0114	1857 PPMC	.0118
HC FID					
TOTAL	1635 PPMC	4022 PPMC	.0256	4160 PPMC	.0265
OLEFINS	360 PPMC	886 PPMC	.0056	916 PPMC	.0058
AROMAT.	637 PPMC	1567 PPMC	.0095	1621 PPMC	.0098
PARAFS.	638 PPMC	1569 PPMC	.0105	1623 PPMC	.0108
NOX	553 PPM	1360 PPM	.0287	1407 PPM	.0297
CO	1.35 PCT	3.32 PCT	.4273	3.43 PCT	.4419
CO2	4.89 PCT	12.03 PCT	2.4315	12.44 PCT	2.5148
O2	.62 PCT	1.53 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	158
3	154
4	160
5	156
6	157
7	0
8	0

B-191

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 218-3

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	89.	.932
SAMP	1632	92.	.923
CARB	1627	128.	.824

ODOMETER	34910
TEST MILES	2.530
TEST MINUTES	7.52
CALC. MILES/HR	20.19
COUNT RATIO	1.003
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	187.5

LICENSE NO.	5223CD
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	450
TRANSMISSION	5M/
AXLE RATIO	7.17/ .00
CARB. NO.	I4
DIST. NO.	I4
AIR CL. NO.	I3

DATE	6/13/67
TIME	10.30
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	1.5

AMBIENT CONDITIONS

TEMP.	72 F
PRESSURE	29.33 IN.
HUMIDITY	56 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.547
MILES/GALLON	5.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.91
DILUTION RATIO	2.637
EXH/AIR RATIO	.964
SCF EXH/MILE	180.8
MILES/GALLON	5.7

IDLE

DWELL ANGLE	30
IGN. TIMING	-5.0
A/F RATIO	12.2
MAN. VAC.	20.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.60
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	845 PPMC	2152 PPMC	.0140	2228 PPMC	.0145
HC FID					
TOTAL	1816 PPMC	4625 PPMC	.0301	4788 PPMC	.0311
OLEFINS	461 PPMC	1174 PPMC	.0076	1216 PPMC	.0079
AROMAT.	623 PPMC	1587 PPMC	.0097	1643 PPMC	.0101
PARAFS.	732 PPMC	1864 PPMC	.0127	1930 PPMC	.0132
NOX	449 PPM	1144 PPM	.0247	1184 PPM	.0256
CO	1.41 PCT	3.59 PCT	.4719	3.72 PCT	.4885
CO2	4.65 PCT	11.84 PCT	2.4451	12.26 PCT	2.5313
O2	.62 PCT	1.58 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	158
3	154
4	160
5	156
6	157
7	0
8	0

2183 VAC. @ 21MPH = 12.0 @ 24MPH = 11.1

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 219-1

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	80.	.960
SAMP	1388	89.	.932
CARB	1390	112.	.866

ODOMETER	28845
TEST MILES	2.740
TEST MINUTES	8.23
CALC. MILES/HR	19.98
COUNT RATIO	.999
AVE. COUNTS/MIN	276.5
CUR. FT./COUNT	.358
SCF AIR/MILE	151.7

LICENSE NO.	7052CN
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	6/14/67
TIME	11.30
GVW, LB	20000
LOAD, LB	6000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.7

AMBIENT CONDITIONS

TEMP.	70 F
PRESSURE	29.34 IN.
HUMIDITY	64 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.856
MILES/GALLON	7.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.45
DILUTION RATIO	3.047
EXH/AIR RATIO	.953
SCF EXH/MILE	144.6
MILES/GALLON	6.9

IDLE

DWELL ANGLE	29
IGN. TIMING	-12.0
A/F RATIO	12.9
MAN. VAC.	17.5
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2470 PPMC	7053 PPMC	.0367	7527 PPMC	.0391
HC FID					
TOTAL	4130 PPMC	11793 PPMC	.0613	12585 PPMC	.0654
OLEFINS	791 PPMC	2259 PPMC	.0117	2410 PPMC	.0125
AROMAT.	1540 PPMC	4398 PPMC	.0216	4693 PPMC	.0230
PARAFS.	1799 PPMC	5137 PPMC	.0280	5482 PPMC	.0299
NOX	931 PPM	2659 PPM	.0459	2837 PPM	.0490
CO	.78 PCT	2.23 PCT	.2342	2.38 PCT	.2499
CO2	4.30 PCT	12.28 PCT	2.0281	13.10 PCT	2.1642
O2	.82 PCT	2.34 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	155
3	151
4	143
5	142
6	158
7	155
8	145

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 219-2

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	84.	.948
SAMP	1369	83.	.951
CARB	1364	111.	.869

ODOMETER	28851
TEST MILES	2.740
TEST MINUTES	8.15
CALC. MILES/HR	20.17
COUNT RATIO	1.004
AVE. COUNTS/MIN	276.5
CUR. FT./COUNT	.358
SCF AIR/MILE	149.5

LICENSE NO.	7052CN
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	4M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	6/14/67
TIME	1.30
GVW, LB	20000
LOAD, LB	6000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.7

AMBIENT CONDITIONS

TEMP.	69 F
PRESSURE	29.31 IN.
HUMIDITY	59 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.820
MILES/GALLON	7.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.55
DILUTION RATIO	2.961
EXH/AIR RATIO	.951
SCF EXH/MILE	142.2
MILES/GALLON	7.2

IDLE	
DWELL ANGLE	29
IGN. TIMING	-12.0
A/F RATIO	12.9
MAN. VAC.	17.5
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2390 PPMC	6740 PPMC	.0345	7076 PPMC	.0362
HC FID					
TOTAL	4044 PPMC	11405 PPMC	.0583	11973 PPMC	.0612
OLEFINS	685 PPMC	1932 PPMC	.0099	2028 PPMC	.0104
AROMAT.	1645 PPMC	4639 PPMC	.0225	4870 PPMC	.0236
PARAFS.	1714 PPMC	4834 PPMC	.0259	5075 PPMC	.0272
NOX	980 PPM	2764 PPM	.0469	2901 PPM	.0493
CO	.72 PCT	2.03 PCT	.2099	2.13 PCT	.2203
CO2	4.46 PCT	12.58 PCT	2.0424	13.20 PCT	2.1442
O2	.69 PCT	1.95 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	155
3	151
4	143
5	142
6	158
7	155
8	145

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 220-3

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	79.	.964
SAMP	1339	80.	.960
CARB	1332	120.	.844

ODOMETER	10922
TEST MILES	2.260
TEST MINUTES	6.90
CALC. MILES/HR	19.65
COUNT RATIO	1.005
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	174.9

LICENSE NO.	7676CF
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	345
TRANSMISSION	5M/
AXLE RATIO	.00/6.40
CARB. NO.	I3
DIST. NO.	I3
AIR CL. NO.	I2

DATE	6/16/67
TIME	11.00
GVW, LB	24000
LOAD, LB	7825
PER CENT LOAD	50
MAXIMUM BHP	197
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	70 F
PRESSURE	29.13 IN.
HUMIDITY	60 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.873
MILES/GALLON	6.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.47
DILUTION RATIO	3.018
EXH/AIR RATIO	.953
SCF EXH/MILE	166.6
MILES/GALLON	6.2

IDLE

DWELL ANGLE	26
IGN. TIMING	.0
A/F RATIO	12.8
MAN. VAC.	17.0
RPM	475

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1410 PPMC	4051 PPMC	.0243	4255 PPMC	.0255
HC FID					
TOTAL	2618 PPMC	7522 PPMC	.0451	7901 PPMC	.0473
OLEFINS	620 PPMC	1781 PPMC	.0107	1871 PPMC	.0112
AROMAT.	675 PPMC	1939 PPMC	.0105	2037 PPMC	.0110
PARAFS.	1323 PPMC	3801 PPMC	.0239	3993 PPMC	.0251
NOX	524 PPM	1506 PPM	.0300	1581 PPM	.0315
CO	.77 PCT	2.21 PCT	.2680	2.32 PCT	.2815
CO2	4.35 PCT	12.50 PCT	2.3785	13.13 PCT	2.4981
O2	.55 PCT	1.58 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	172
3	162
4	164
5	168
6	161
7	165
8	165

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 220-4

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2693	79.	.964
SAMP	1291	87.	.938
CARB	1290	107.	.880

ODOMETER	10930
TEST MILES	2.320
TEST MINUTES	6.99
CALC. MILES/HR	19.91
COUNT RATIO	1.001
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	171.7

LICENSE NO.	7676CF
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	345
TRANSMISSION	5M/
AXLE RATIO	.00/6.40
CARB. NO.	I3
DIST. NO.	I3
AIR CL. NO.	I2

DATE	6/16/67
TIME	2.15
GVW, LB	24000
LOAD, LB	7825
PER CENT LOAD	50
MAXIMUM BHP	197
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	69 F
PRESSURE	29.10 IN.
HUMIDITY	62 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.142
MILES/GALLON	6.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.49
DILUTION RATIO	3.221
EXH/AIR RATIO	.952
SCF EXH/MILE	163.5
MILES/GALLON	6.4

IDLE	
DWELL ANGLE	26
IGN. TIMING	.0
A/F RATIO	12.8
MAN. VAC.	17.0
RPM	475
ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1100 PPMC	3456 PPMC	.0203	3544 PPMC	.0208
HC FID					
TOTAL	2208 PPMC	6938 PPMC	.0408	7113 PPMC	.0418
OLEFINS	504 PPMC	1584 PPMC	.0093	1624 PPMC	.0095
AROMAT.	614 PPMC	1929 PPMC	.0104	1978 PPMC	.0106
PARAFS.	1090 PPMC	3425 PPMC	.0211	3511 PPMC	.0217
NOX	573 PPM	1800 PPM	.0351	1846 PPM	.0360
CO	.71 PCT	2.23 PCT	.2652	2.29 PCT	.2719
CO2	4.08 PCT	12.82 PCT	2.3942	13.14 PCT	2.4547
O2	.46 PCT	1.45 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	172
3	162
4	164
5	168
6	161
7	165
8	165

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 221-1

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	79.	.964
SAMP	1337	85.	.945
CARB	1337	101.	.897

ODOMETER	130075
TEST MILES	2.530
TEST MINUTES	7.46
CALC. MILES/HR	20.35
COUNT RATIO	1.000
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	165.9

LICENSE NO.	263D29
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	351
TRANSMISSION	5M/
AXLE RATIO	5.57/8.85
CARB. NO.	G2
DIST. NO.	G4
AIR CL. NO.	G4

DATE	6/20/67
TIME	3.45
GVW, LB	26000
LOAD, LB	8000
PER CENT LOAD	50
MAXIMUM BHP	195
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	72 F
PRESSURE	29.11 IN.
HUMIDITY	67 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.907
MILES/GALLON	7.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.00
DILUTION RATIO	3.098
EXH/AIR RATIO	.943
SCF EXH/MILE	156.4
MILES/GALLON	7.0

IDLE	
DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	12.8
MAN. VAC.	17.0
RPM	550

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	55.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1020 PPMC	2966 PPMC	.0167	3160 PPMC	.0178
HC FID					
TOTAL	1903 PPMC	5533 PPMC	.0311	5895 PPMC	.0331
OLEFINS	429 PPMC	1247 PPMC	.0070	1329 PPMC	.0075
AROMAT.	630 PPMC	1832 PPMC	.0096	1952 PPMC	.0103
PARAFS.	844 PPMC	2454 PPMC	.0145	2614 PPMC	.0154
NOX	1173 PPM	3410 PPM	.0637	3634 PPM	.0678
CO	.44 PCT	1.28 PCT	.1454	1.36 PCT	.1550
CO2	4.34 PCT	12.62 PCT	2.2539	13.44 PCT	2.4013
O2	.89 PCT	2.59 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	153
2	156
3	156
4	146
5	142
6	160
7	0
8	0

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 221-2

						ODOMETER	130100	LICENSE NO.	263D29	DATE	6/21/67
				GAS TEMP.		TEST MILES	2.680			TIME	8.45
ROAD OPN.	DETROIT			.....		TEST MINUTES	7.76	MODEL YEAR	1964		
WT. CLASS	4		COUNT	DEG.	CORR.	CALC. MILES/HR	20.72	ENGINE TYPE	V-6	GVW, LB	26000
LOAD	HALF					COUNT RATIO	1.001	DISPLACEMENT	351	LOAD, LB	8000
TRUCK MAKE	GMC	NITR	2500	78.	.967	AVE. COUNTS/MIN	270.1	TRANSMISSION	5M/	PER CENT LOAD	50
FLOW ELEM.	4	SAMP	1343	87.	.938	CUB. FT./COUNT	.367	AXLE RATIO	5.57/8.85		
TRUCK NUMBER	1	CARB	1341	85.	.945	SCF AIR/MILE	165.4	CARB. NO.	G2	MAXIMUM BHP	195
								DIST. NO.	G4	CL.MASK, SQ. IN.	.0
CHASSIS DYNAM.								AIR CL. NO.	G4	PCV, CFM	.0

		FROM NITROGEN COUNTS		FROM CO/CO2 CALCN.					
AMBIENT CONDITIONS						IDLE		ROUTE	CD
		DILUTION RATIO	2.918	AIR/FUEL RATIO	14.20	DWELL ANGLE	32	TRAFFIC	
TEMP.	69 F			DILUTION RATIO	3.118	IGN. TIMING	-5.0		
PRESSURE	29.04 IN.			EXH/AIR RATIO	.939	A/F RATIO	12.8	RPM/MPH	
HUMIDITY	66 PCT	MILES/GALLON	7.6	SCF EXH/MILE	155.4	MAN. VAC.	18.0	HIGH GEAR	55.50
				MILES/GALLON	7.1	RPM	550	ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1010 PPMC	2947 PPMC	.0165	3149 PPMC	.0176
HC FID					
TOTAL	1819 PPMC	5308 PPMC	.0297	5672 PPMC	.0317
OLEFINS	361 PPMC	1053 PPMC	.0059	1126 PPMC	.0063
AROMAT.	684 PPMC	1996 PPMC	.0105	2133 PPMC	.0113
PARAFS.	774 PPMC	2258 PPMC	.0132	2413 PPMC	.0141
NOX	1200 PPM	3502 PPM	.0650	3742 PPM	.0694
CO	.37 PCT	1.08 PCT	.1219	1.15 PCT	.1303
CO2	4.32 PCT	12.61 PCT	2.2368	13.47 PCT	2.3902
O2	.87 PCT	2.54 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	153
2	156
3	156
4	146
5	142
6	160
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 222-1

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	79.	.964
SAMP	1004	86.	.941
CARB	1002	85.	.945

ODOMETER	25690
TEST MILES	3.610
TEST MINUTES	10.57
CALC. MILES/HR	20.49
COUNT RATIO	1.002
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	92.8

LICENSE NO.	MF8835
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	266
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/22/67
TIME	10.57
GVW, LB	7300
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.07 IN.
HUMIDITY	74 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.549
MILES/GALLON	11.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.42
DILUTION RATIO	3.559
EXH/AIR RATIO	.954
SCF EXH/MILE	88.5
MILES/GALLON	11.2

IDLE	
DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAP	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2200 PPMC	7807 PPMC	.0249	7830 PPMC	.0249
HC FID					
TOTAL	3935 PPMC	13964 PPMC	.0445	14006 PPMC	.0446
OLEFINS	439 PPMC	1558 PPMC	.0050	1563 PPMC	.0050
AROMAT.	1440 PPMC	5110 PPMC	.0151	5125 PPMC	.0152
PARAFS.	2056 PPMC	7296 PPMC	.0244	7318 PPMC	.0244
NOX	385 PPM	1366 PPM	.0144	1370 PPM	.0145
CO	.69 PCT	2.45 PCT	.1576	2.46 PCT	.1581
CO2	3.67 PCT	13.02 PCT	1.3170	13.06 PCT	1.3210
O2	.65 PCT	2.31 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	157
3	149
4	158
5	162
6	154
7	158
8	156

B-243

B-104

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 222-2

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAV.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	80.	.932
SAMP	1003	92.	.923
CARB	1004	82.	.954

ODOMETER	25700
TEST MILES	3.510
TEST MINUTES	10.21
CALC. MILES/HR	20.63
COUNT RATIO	.999
AVE. COUNTS/MIN	267.0
CUR. FT./COUNT	.371
SCF AIR/MILE	96.8

LICENSE NO.	MF8835
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	266
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	I
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/22/67
TIME	10.00
GVW, LB	7300
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	66 F
PRESSURE	29.08 IN.
HUMIDITY	69 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.517
MILES/GALLON	10.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.38
DILUTION RATIO	3.527
EXH/AIR RATIO	.954
SCF EXH/MILE	92.4
MILES/GALLON	10.7

IDLE	
DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2270 PPMC	7984 PPMC	.0265	8006 PPMC	.0266
HC FID					
TOTAL	3916 PPMC	13773 PPMC	.0458	13812 PPMC	.0459
OLEFINS	393 PPMC	1382 PPMC	.0046	1386 PPMC	.0046
AROMAT.	1409 PPMC	4956 PPMC	.0153	4969 PPMC	.0153
PARAFS.	2114 PPMC	7435 PPMC	.0259	7456 PPMC	.0260
NOX	393 PPM	1382 PPM	.0153	1386 PPM	.0153
CO	.72 PCT	2.53 PCT	.1701	2.54 PCT	.1706
CO2	3.69 PCT	12.98 PCT	1.3696	13.01 PCT	1.3736
O2	.64 PCT	2.25 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	157
3	149
4	158
5	162
6	154
7	158
8	156

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 223-1

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	82.	.954
SAMP	831	85.	.945
CARB	836	84.	.948

ODOMETER	12330
TEST MILES	3.100
TEST MINUTES	9.07
CALC. MILES/HR	20.51
COUNT RATIO	.994
AVE. COUNTS/MIN	267.0
CUR. FT./COUNT	.371
SCF AIR/MILE	91.1

LICENSE NO.	7111CZ
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	318
TRANSMISSION	4M/
AXLE RATIO	4.10/ .00
CARB. NO.	D2
DIST. NO.	D2
AIR CL. NO.	D2

DATE	6/23/67
TIME	1.00
GVW, LB	7500
LOAD, LB	1550
PER CENT LOAD	50
MAXIMUM BHP	200
CL.MASK, SQ. IN.	8.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	68 F
PRESSURE	29.17 IN.
HUMIDITY	57 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.431
MILES/GALLON	11.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.20
DILUTION RATIO	3.564
EXH/AIR RATIO	.958
SCF EXH/MILE	87.3
MILES/GALLON	11.5

IDLE

DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.6
MAN. VAC.	17.5
RPM	600

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	49.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1660 PPMC	5695 PPMC	.0179	5916 PPMC	.0186
HC FID					
TOTAL	2967 PPMC	10179 PPMC	.0320	10575 PPMC	.0332
OLEFINS	460 PPMC	1578 PPMC	.0050	1639 PPMC	.0051
AROMAT.	854 PPMC	2930 PPMC	.0083	3044 PPMC	.0087
PARAFS.	1653 PPMC	5671 PPMC	.0187	5891 PPMC	.0194
NOX	359 PPM	1232 PPM	.0128	1280 PPM	.0133
CO	.84 PCT	2.88 PCT	.1829	2.99 PCT	.1900
CO2	3.57 PCT	12.25 PCT	1.2213	12.72 PCT	1.2688
O2	.80 PCT	2.74 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	152
3	143
4	149
5	143
6	146
7	147
8	151

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 223-3

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	82.	.954
SAMP	866	83.	.951
CARB	866	82.	.954

ODOMETER	12345
TEST MILES	3.140
TEST MINUTES	9.22
CALC. MILES/HR	20.43
COUNT RATIO	1.000
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	93.7

LICENSE NO.	7111CZ
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	318
TRANSMISSION	4M/
AXLE RATIO	4.10/ .00
CARB. NO.	D2
DIST. NO.	D2
AIR CL. NO.	D2

DATE	6/23/67
TIME	2.45
GVW, LB	7500
LOAD, LB	1550
PER CENT LOAD	50
MAXIMUM BHP	200
CL.MASK, SQ. IN.	8.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	71 F
PRESSURE	29.17 IN.
HUMIDITY	55 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.317
MILES/GALLON	11.5

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.32
DILUTION RATIO	3.380
EXH/AIR RATIO	.956
SCF EXH/MILE	89.6
MILES/GALLON	11.3

IDLE

DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.6
MAN. VAC.	17.5
RPM	600

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	49.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1670 PPMC	5540 PPMC	.0178	5644 PPMC	.0182
HC FID					
TOTAL	2967 PPMC	9842 PPMC	.0317	10027 PPMC	.0323
OLEFINS	528 PPMC	1751 PPMC	.0056	1784 PPMC	.0057
AROMAT.	813 PPMC	2697 PPMC	.0078	2748 PPMC	.0080
PARAFS.	1626 PPMC	5394 PPMC	.0182	5495 PPMC	.0186
NOX	373 PPM	1237 PPM	.0132	1261 PPM	.0135
CO	.80 PCT	2.65 PCT	.1728	2.70 PCT	.1761
CO2	3.82 PCT	12.67 PCT	1.2964	12.91 PCT	1.3208
O2	.83 PCT	2.75 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	150
2	152
3	143
4	149
5	143
6	146
7	147
8	151

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 224-1

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	4

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	88.	.935
SAMP	903	92.	.923
CARB	896	99.	.902

ODOMETER	40745
TEST MILES	2.590
TEST MINUTES	7.86
CALC. MILES/HR	19.77
COUNT RATIO	1.008
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	111.1

LICENSE NO.	4407DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/26/67
TIME	3.15
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	68 F
PRESSURE	29.37 IN.
HUMIDITY	47 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.244
MILES/GALLON	9.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.81
DILUTION RATIO	3.244
EXH/AIR RATIO	.966
SCF EXH/MILE	107.3
MILES/GALLON	9.0

IDLE

DWELL ANGLE	34
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	17.0
RPM	425

ROUTE	CD
TRAFFIC	

RPM/MPH

HIGH GEAR	59.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1210 PPMC	3925 PPMC	.0152	3925 PPMC	.0152
HC FID					
TOTAL	2186 PPMC	7091 PPMC	.0274	7091 PPMC	.0274
OLEFINS	266 PPMC	863 PPMC	.0033	863 PPMC	.0033
AROMAT.	680 PPMC	2206 PPMC	.0078	2206 PPMC	.0078
PARAFS.	1240 PPMC	4023 PPMC	.0163	4023 PPMC	.0163
NOX	395 PPM	1281 PPM	.0164	1281 PPM	.0164
CO	1.28 PCT	4.15 PCT	.3240	4.15 PCT	.3240
CO2	3.89 PCT	12.62 PCT	1.5472	12.62 PCT	1.5472
O2	.53 PCT	1.72 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	146
2	151
3	160
4	155
5	158
6	150
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.109 IS LOWER THAN 3.244 FROM NITROGEN COUNTS

B 1 207

B-203

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 224-2

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	4

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	99.	.902
SAMP	898	100.	.900
CARB	891	100.	.900

ODOMETER	40755
TEST MILES	2.550
TEST MINUTES	7.73
CALC. MILES/HR	19.79
COUNT RATIO	1.008
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	111.9

LICENSE NO.	4407DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/26/67
TIME	4.15
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.36 IN.
HUMIDITY	43 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.234
MILES/GALLON	9.2

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.69
DILUTION RATIO	3.269
EXH/AIR RATIO	.969
SCF EXH/MILE	108.5
MILES/GALLON	9.1

IDLE	
DWELL ANGLE	34
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	17.0
RPM	450
ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	59.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1360 PPMC	4399 PPMC	.0172	4446 PPMC	.0173
HC FID					
TOTAL	2386 PPMC	7717 PPMC	.0301	7800 PPMC	.0304
OLEFINS	386 PPMC	1248 PPMC	.0049	1262 PPMC	.0049
AROMAT.	667 PPMC	2157 PPMC	.0076	2180 PPMC	.0077
PARAFS.	1333 PPMC	4311 PPMC	.0176	4358 PPMC	.0178
NOX	366 PPM	1184 PPM	.0153	1196 PPM	.0155
CO	1.31 PCT	4.24 PCT	.3342	4.28 PCT	.3377
CO2	3.64 PCT	11.77 PCT	1.4588	11.90 PCT	1.4744
O2	.48 PCT	1.55 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	146
2	151
3	160
4	155
5	158
6	150
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 225-1

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	77.	.970
SAMP	894	82.	.954
CARB	893	84.	.948

ODOMETER	14718
TEST MILES	3.250
TEST MINUTES	9.41
CALC. MILES/HR	20.72
COUNT RATIO	1.001
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	92.8

LICENSE NO.	7686CF
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F4
DIST. NO.	F4
AIR CL. NO.	F1

DATE	6/28/67
TIME	10.30
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	72 F
PRESSURE	29.22 IN.
HUMIDITY	60 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.275
MILES/GALLON	10.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.55
DILUTION RATIO	3.275
EXH/AIR RATIO	.972
SCF EXH/MILE	90.2
MILES/GALLON	10.3

IDLE	
DWELL ANGLE	39
IGN. TIMING	-6.0
A/F RATIO	12.8
MAN. VAC.	18.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2610 PPMC	8547 PPMC	.0277	8547 PPMC	.0277
HC FID					
TOTAL	4341 PPMC	14216 PPMC	.0461	14216 PPMC	.0461
OLEFINS	297 PPMC	973 PPMC	.0032	973 PPMC	.0032
AROMAT.	1483 PPMC	4856 PPMC	.0144	4856 PPMC	.0144
PARAFS.	2561 PPMC	8387 PPMC	.0285	8387 PPMC	.0285
NOX	330 PPM	1081 PPM	.0116	1081 PPM	.0116
CO	1.45 PCT	4.75 PCT	.3114	4.75 PCT	.3114
CO2	3.65 PCT	11.95 PCT	1.2315	11.95 PCT	1.2315
O2	.48 PCT	1.57 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	183
2	197
3	196
4	191
5	196
6	185
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.198 IS LOWER THAN 3.275 FROM NITROGEN COUNTS

69 1 299

B-210

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 225-2

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	81.	.957
SAMP	877	84.	.948
CARB	877	81.	.957

ODOMETER	14722
TEST MILES	3.230
TEST MINUTES	9.42
CALC. MILES/HR	20.57
COUNT RATIO	1.000
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	92.6

LICENSE NO.	7686CF
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F4
DIST. NO.	F4
AIR CL. NO.	F1

DATE	6/28/67
TIME	11.30
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	69 F
PRESSURE	29.20 IN.
HUMIDITY	63 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.303
MILES/GALLON	10.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.68
DILUTION RATIO	3.303
EXH/AIR RATIO	.969
SCF EXH/MILE	89.7
MILES/GALLON	10.4

IDLE

DWELL ANGLE	39
IGN. TIMING	-6.0
A/F RATIO	12.8
MAN. VAC.	18.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2575 PPMC	8506 PPMC	.0274	8506 PPMC	.0274
HC FID					
TOTAL	4201 PPMC	13877 PPMC	.0448	13877 PPMC	.0448
OLEFINS	204 PPMC	674 PPMC	.0022	674 PPMC	.0022
AROMAT.	1423 PPMC	4701 PPMC	.0138	4701 PPMC	.0138
PARAFS.	2574 PPMC	8503 PPMC	.0288	8503 PPMC	.0288
NOX	320 PPM	1057 PPM	.0113	1057 PPM	.0113
CO	1.33 PCT	4.39 PCT	.2866	4.39 PCT	.2866
CO2	3.69 PCT	12.19 PCT	1.2494	12.19 PCT	1.2494
O2	.44 PCT	1.45 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	183
2	197
3	196
4	191
5	196
6	185
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.224 IS LOWER THAN 3.303 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 226-1

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	78.	.967
SAMP	1333	83.	.951
CARB	1336	109.	.874

ODOMETER	35193
TEST MILES	2.800
TEST MINUTES	8.33
CALC. MILES/HR	20.17
COUNT RATIO	.998
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	146.0

LICENSE NO.	7612CF
MODEL YEAR	1964
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.17/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/29/67
TIME	10.40
GVW, LB	20000
LOAD, LB	5500
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	1.4

AMBIENT CONDITIONS

TEMP.	73 F
PRESSURE	29.08 IN.
HUMIDITY	62 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.526
MILES/GALLON	7.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.43
DILUTION RATIO	2.659
EXH/AIR RATIO	.953
SCF EXH/MILE	139.2
MILES/GALLON	7.4

IDLE	
DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.7
MAN. VAC.	19.0
RPM	500

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	54.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1900 PPMC	4799 PPMC	.0240	5052 PPMC	.0253
HC FID					
TOTAL	3238 PPMC	8178 PPMC	.0409	8609 PPMC	.0431
OLEFINS	392 PPMC	990 PPMC	.0050	1042 PPMC	.0052
AROMAT.	881 PPMC	2225 PPMC	.0099	2342 PPMC	.0104
PARAFS.	1965 PPMC	4963 PPMC	.0261	5225 PPMC	.0274
NOX	571 PPM	1442 PPM	.0240	1518 PPM	.0252
CO	.91 PCT	2.30 PCT	.2325	2.42 PCT	.2448
CO2	4.92 PCT	12.43 PCT	1.9751	13.08 PCT	2.0794
O2	.71 PCT	1.79 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	128
2	142
3	120
4	146
5	158
6	135
7	150
8	152

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 226-2

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1
CHASSIS DYNAM.	

	COUNT	GAS TEMP. DEG.	CORR.
NDIR	2600	85.	.945
SAMP	1267	88.	.935
CARB	1263	110.	.871

ODOMETER	35198
TEST MILES	2.710
TEST MINUTES	8.18
CALC. MILES/HR	19.88
COUNT RATIO	1.003
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	142.4

LICENSE NO.	7612CF
MODEL YEAR	1964
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.17/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/29/67
TIME	1.15
GVW, LB	20000
LOAD, LB	5500
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	1.4

AMBIENT CONDITIONS

TEMP.	68 F
PRESSURE	29.09 IN.
HUMIDITY	68 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.594
MILES/GALLON	8.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.45
DILUTION RATIO	2.783
EXH/AIR RATIO	.953
SCF EXH/MILE	135.7
MILES/GALLON	7.6

IDLE	
DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.7
MAN. VAC.	19.0
RPM	500
ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	54.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1880 PPMC	4877 PPMC	.0238	5232 PPMC	.0255
HC FID					
TOTAL	3171 PPMC	8226 PPMC	.0401	8825 PPMC	.0431
OLEFINS	325 PPMC	843 PPMC	.0041	904 PPMC	.0044
AROMAT.	908 PPMC	2356 PPMC	.0103	2527 PPMC	.0110
PARAFS.	1938 PPMC	5028 PPMC	.0257	5394 PPMC	.0276
NOX	593 PPM	1538 PPM	.0249	1650 PPM	.0267
CO	.85 PCT	2.21 PCT	.2175	2.37 PCT	.2333
CO2	4.71 PCT	12.22 PCT	1.8934	13.11 PCT	2.0312
O2	.81 PCT	2.10 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	128
2	142
3	120
4	146
5	158
6	135
7	150
8	152

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 227-3

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	70.	.993
SAMP	1162	80.	.960
CARR	1161	100.	.900

ODOMETER	28783
TEST MILES	2.450
TEST MINUTES	7.65
CALC. MILES/HR	19.22
COUNT RATIO	1.001
AVE. COUNTS/MIN	271.3
CUR. FT./COUNT	.365
SCF AIR/MILE	148.9

LICENSE NO.	4405DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	7/ 3/67
TIME	9.30
GVW. LB	19500
LOAD. LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK. SQ. IN.	4.9
PCV. CFM	1.9

AMBIENT CONDITIONS

TEMP.	70 F
PRESSURE	29.07 IN.
HUMIDITY	58 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.780
MILES/GALLON	6.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.72
DILUTION RATIO	2.794
EXH/AIR RATIO	.968
SCF EXH/MILE	144.2
MILES/GALLON	6.8

IDLE	
DWELL ANGLE	39
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	450

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2110 PPMC	5866 PPMC	.0304	5895 PPMC	.0306
HC FID					
TOTAL	3688 PPMC	10253 PPMC	.0531	10304 PPMC	.0534
OLEFINS	535 PPMC	1487 PPMC	.0077	1495 PPMC	.0077
AROMAT.	959 PPMC	2666 PPMC	.0123	2679 PPMC	.0123
PARAFS.	2194 PPMC	6099 PPMC	.0332	6130 PPMC	.0333
NOX	566 PPM	1574 PPM	.0271	1581 PPM	.0272
CO	1.50 PCT	4.17 PCT	.4370	4.19 PCT	.4392
CO2	4.28 PCT	11.90 PCT	1.9591	11.96 PCT	1.9689
O2	.73 PCT	2.03 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	155
2	157
3	155
4	159
5	155
6	159
7	0
8	0

2273 VAC. @ 25MPH = 12 @ 28MPH = 13.1

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 227-4

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	81.	.957
SAMP	1112	90.	.929
CARB	1117	95.	.914

ODOMETER	28785
TEST MILES	2.440
TEST MINUTES	7.73
CALC. MILES/HR	18.94
COUNT RATIO	.996
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	146.2

LICENSE NO.	4405DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	7/ 3/67
TIME	10.45
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	69 F
PRESSURE	29.09 IN.
HUMIDITY	63 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.853
MILES/GALLON	7.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.84
DILUTION RATIO	2.859
EXH/AIR RATIO	.966
SCF EXH/MILE	141.1
MILES/GALLON	7.0

IDLE

DWELL ANGLE	39
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	475

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2000 PPMC	5706 PPMC	.0290	5718 PPMC	.0290
HC FID					
TOTAL	3455 PPMC	9856 PPMC	.0500	9878 PPMC	.0501
OLEFINS	439 PPMC	1252 PPMC	.0064	1255 PPMC	.0064
AROMAT.	822 PPMC	2345 PPMC	.0104	2350 PPMC	.0104
PARAFS.	2194 PPMC	6259 PPMC	.0333	6273 PPMC	.0334
NOX	621 PPM	1772 PPM	.0299	1776 PPM	.0299
CO	1.36 PCT	3.88 PCT	.3980	3.89 PCT	.3989
CO2	4.25 PCT	12.12 PCT	1.9543	12.15 PCT	1.9587
O2	.73 PCT	2.08 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	157
3	155
4	159
5	155
6	159
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 228-1

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2500	80.	.960
SAMP	1468	96.	.911
CARB	1464	89.	.932

ODOMETER	34399
TEST MILES	2.390
TEST MINUTES	7.38
CALC. MILES/HR	19.43
COUNT RATIO	1.003
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	203.7

LICENSE NO.	9668CD
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	7.10/9.01
CARB. NO.	D3
DIST. NO.	D2
AIR CL. NO.	I3

DATE	7/ 6/67
TIME	10.30
GVW, LB	25000
LOAD, LB	9000
PER CENT LOAD	50
MAXIMUM BHP	194
CL.MASK, SQ. IN.	8.0
PCV, CFM	.5

AMBIENT CONDITIONS

TEMP.	69 F
PRESSURE	29.54 IN.
HUMIDITY	59 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.795
MILES/GALLON	5.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.97
DILUTION RATIO	2.795
EXH/AIR RATIO	.963
SCF EXH/MILE	196.1
MILES/GALLON	5.0

IDLE

DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.2
MAN. VAC.	17.0
RPM	500

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2200 PPMC	6149 PPMC	.0434	6149 PPMC	.0434
HC FID					
TOTAL	3735 PPMC	10439 PPMC	.0736	10439 PPMC	.0736
OLEFINS	336 PPMC	939 PPMC	.0066	939 PPMC	.0066
AROMAT.	535 PPMC	1495 PPMC	.0078	1495 PPMC	.0078
PARAFS.	2864 PPMC	8005 PPMC	.0592	8005 PPMC	.0592
NOX	767 PPM	2144 PPM	.0502	2144 PPM	.0502
CO	1.29 PCT	3.61 PCT	.5140	3.61 PCT	.5140
CO2	4.47 PCT	12.49 PCT	2.7983	12.49 PCT	2.7983
O2	.33 PCT	.92 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	124
2	124
3	123
4	116
5	123
6	125
7	126
8	125

DIL. RATIO FROM CO/CO2 CALCN. = 2.765 IS LOWER THAN 2.795 FROM NITROGEN COUNTS

B-215

8-216

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 228-2

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2501	92.	.923
SAMP	1431	100.	.900
CARB	1425	89.	.932

ODOMETER	34403
TEST MILES	2.370
TEST MINUTES	7.61
CALC. MILES/HR	18.69
COUNT RATIO	1.004
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	200.5

LICENSE NO.	9668CD
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	7.10/9.01
CARB. NO.	D3
DIST. NO.	D2
AIR CL. NO.	I3

DATE	7/ 6/67
TIME	1.20
GVW, LB	25000
LOAD, LB	9000
PER CENT LOAD	50
MAXIMUM BHP	194
CL.MASK, SQ. IN.	8.0
PCV, CFM	.5

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.53 IN.
HUMIDITY	49 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.794
MILES/GALLON	5.2

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.97
DILUTION RATIO	2.859
EXH/AIR RATIO	.963
SCF EXH/MILE	193.1
MILES/GALLON	5.1

IDLE	
DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.2
MAN. VAC.	17.0
RPM	475

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2250 PPMC	6286 PPMC	.0436	6434 PPMC	.0447
HC FID					
TOTAL	3721 PPMC	10395 PPMC	.0722	10640 PPMC	.0739
OLEFINS	247 PPMC	690 PPMC	.0048	706 PPMC	.0049
AROMAT.	616 PPMC	1721 PPMC	.0092	1761 PPMC	.0095
PARAFS.	2858 PPMC	7984 PPMC	.0581	8172 PPMC	.0595
NOX	690 PPM	1928 PPM	.0444	1973 PPM	.0455
CO	1.25 PCT	3.49 PCT	.4901	3.57 PCT	.5017
CO2	4.32 PCT	12.07 PCT	2.6613	12.35 PCT	2.7239
O2	.45 PCT	1.26 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	124
2	124
3	123
4	116
5	123
6	125
7	126
8	125

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 229-2

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	4

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2005	89.	.932
SAMP	788	100.	.900
CAPB	790	94.	.917

ODOMETER	21244
TEST MILES	3.130
TEST MINUTES	9.32
CALC. MILES/HR	20.15
COUNT RATIO	.997
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	81.8

LICENSE NO.	4410DZ
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	5.12/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	7/ 7/67
TIME	3.00
GVW, LB	10000
LOAD, LB	2075
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.42 IN.
HUMIDITY	66 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.637
MILES/GALLON	11.1

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.21
DILUTION RATIO	3.637
EXH/AIR RATIO	.981
SCF EXH/MILE	80.2
MILES/GALLON	11.1

IDLE	
DWELL ANGLE	36
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	18.0
RPM	475

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	58.10
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2610 PPMC	9492 PPMC	.0274	9492 PPMC	.0274
HC FID					
TOTAL	4347 PPMC	15810 PPMC	.0456	15810 PPMC	.0456
OLEFINS	343 PPMC	1247 PPMC	.0036	1247 PPMC	.0036
AROMAT.	636 PPMC	2313 PPMC	.0049	2313 PPMC	.0049
PARAFS.	3368 PPMC	12249 PPMC	.0371	12249 PPMC	.0371
NOX	226 PPM	822 PPM	.0079	822 PPM	.0079
CO	1.57 PCT	5.71 PCT	.3330	5.71 PCT	.3330
CO2	3.20 PCT	11.64 PCT	1.0664	11.64 PCT	1.0664
O2	.49 PCT	1.78 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	178
3	175
4	182
5	178
6	165
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.482 IS LOWER THAN 3.637 FROM NITROGEN COUNTS

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PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 229-3

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	4

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	103.	.891
SAMP	772	104.	.888
CARB	773	94.	.917

ODOMETER	21237
TEST MILES	3.090
TEST MINUTES	8.75
CALC. MILES/HR	21.19
COUNT RATIO	.999
AVE. COUNTS/MIN	271.3
CUB. FT./COUNT	.365
SCF AIR/MILE	81.0

LICENSE NO.	4410DZ
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	4M/
AXLE RATIO	5.12/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C2

DATE	7/ 7/67
TIME	3.30
GVW, LB	10000
LOAD, LB	2075
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.7

AMBIENT CONDITIONS

TEMP.	66 F
PRESSURE	29.41 IN.
HUMIDITY	70 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.599
MILES/GALLON	11.6

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.23
DILUTION RATIO	3.599
EXH/AIR RATIO	.980
SCF EXH/MILE	79.4
MILES/GALLON	11.6

IDLE	
DWELL ANGLE	36
IGN. TIMING	-4.0
A/F RATIO	13.1
MAN. VAC.	18.0
RPM	475

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	58.10
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2510 PPMC	9033 PPMC	.0258	9033 PPMC	.0258
HC FID					
TOTAL	4169 PPMC	15004 PPMC	.0429	15004 PPMC	.0429
OLEFINS	356 PPMC	1281 PPMC	.0037	1281 PPMC	.0037
AROMAT.	445 PPMC	1602 PPMC	.0029	1602 PPMC	.0029
PARAFS.	3368 PPMC	12121 PPMC	.0363	12121 PPMC	.0363
NOX	253 PPM	911 PPM	.0086	911 PPM	.0086
CO	1.52 PCT	5.47 PCT	.3159	5.47 PCT	.3159
CO2	3.13 PCT	11.26 PCT	1.0219	11.26 PCT	1.0219
O2	.44 PCT	1.58 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	178
3	175
4	182
5	178
6	165
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.568 IS LOWER THAN 3.599 FROM NITROGEN COUNTS

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 230-3

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	2000	79.	.964
SAMP	831	81.	.957
CARB	838	80.	.960

ODOMETER	13482
TEST MILES	3.130
TEST MINUTES	9.04
CALC. MILES/HR	20.77
COUNT RATIO	.992
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	91.1

LICENSE NO.	7670CM
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C3

DATE	7/10/67
TIME	2.00
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.3

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.14 IN.
HUMIDITY	82 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.423
MILES/GALLON	11.9

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.45
DILUTION RATIO	3.456
EXH/AIR RATIO	.953
SCF EXH/MILE	86.8
MILES/GALLON	11.8

IDLE	
DWELL ANGLE	33
IGN. TIMING	-4.0
A/F RATIO	12.8
MAN. VAC.	18.5
RPM	500

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1560 PPMC	5340 PPMC	.0167	5392 PPMC	.0168
HC FID					
TOTAL	2768 PPMC	9474 PPMC	.0296	9567 PPMC	.0299
OLEFINS	303 PPMC	1037 PPMC	.0032	1047 PPMC	.0033
AROMAT.	264 PPMC	904 PPMC	.0017	912 PPMC	.0017
PARAFS.	2201 PPMC	7534 PPMC	.0247	7607 PPMC	.0249
NOX	580 PPM	1985 PPM	.0206	2005 PPM	.0208
CO	.69 PCT	2.36 PCT	.1491	2.38 PCT	.1505
CO2	3.79 PCT	12.97 PCT	1.2866	13.10 PCT	1.2991
O2	.60 PCT	2.05 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	190
2	196
3	197
4	194
5	196
6	198
7	0
8	0

B-219

B-220

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 230-4

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	71.	.990
SAMP	840	75.	.977
CARB	837	80.	.960

ODOMETER	13488
TEST MILES	3.170
TEST MINUTES	9.17
CALC. MILES/HR	20.74
COUNT RATIO	1.004
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	90.1

LICENSE NO.	7670CM
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	250
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C2
DIST. NO.	C2
AIR CL. NO.	C3

DATE	7/10/67
TIME	3.30
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	8.0
PCV, CFM	1.3

AMBIENT CONDITIONS

TEMP.	65 F
PRESSURE	29.12 IN.
HUMIDITY	73 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.413
MILES/GALLON	12.6

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.44
DILUTION RATIO	3.618
EXH/AIR RATIO	.953
SCF EXH/MILE	85.9
MILES/GALLON	11.9

IDLE	
DWELL ANGLE	33
IGN. TIMING	-4.0
A/F RATIO	12.8
MAN. VAC.	19.0
RPM	600

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1610 PPMC	5495 PPMC	.0170	5825 PPMC	.0180
HC FID					
TOTAL	2781 PPMC	9492 PPMC	.0293	10062 PPMC	.0311
OLEFINS	277 PPMC	945 PPMC	.0029	1002 PPMC	.0031
AROMAT.	263 PPMC	898 PPMC	.0016	952 PPMC	.0017
PARAFS.	2241 PPMC	7649 PPMC	.0248	8108 PPMC	.0263
NOX	593 PPM	2024 PPM	.0207	2146 PPM	.0220
CO	.66 PCT	2.25 PCT	.1406	2.39 PCT	.1490
CO2	3.62 PCT	12.36 PCT	1.2116	13.10 PCT	1.2843
O2	.61 PCT	2.08 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	190
2	196
3	197
4	194
5	196
6	198
7	0
8	0

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 231-2

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	91.	.926
SAMP	687	91.	.926
CARB	693	75.	.977

ODOMETER	17004
TEST MILES	3.220
TEST MINUTES	9.33
CALC. MILES/HR	20.71
COUNT RATIO	.991
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	73.8

LICENSE NO.	345093
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	7/11/67
TIME	1.25
GVW, LB	7500
LOAD, LB	1450
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	66 F
PRESSURE	29.12 IN.
HUMIDITY	69 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.911
MILES/GALLON	13.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.45
DILUTION RATIO	4.069
EXH/AIR RATIO	.975
SCF EXH/MILE	72.0
MILES/GALLON	13.0

IDLE	
DWELL ANGLE	29
IGN. TIMING	-4.0
A/F RATIO	13.0
MAN. VAC.	19.0
RPM	450

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.40
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2560 PPMC	10013 PPMC	.0259	10416 PPMC	.0270
HC FID					
TOTAL	3999 PPMC	15641 PPMC	.0405	16272 PPMC	.0421
OLEFINS	132 PPMC	516 PPMC	.0013	537 PPMC	.0014
AROMAT.	314 PPMC	1228 PPMC	.0014	1278 PPMC	.0015
PARAFS.	3553 PPMC	13897 PPMC	.0377	14457 PPMC	.0392
NOX	126 PPM	493 PPM	.0042	513 PPM	.0044
CO	1.20 PCT	4.69 PCT	.2456	4.88 PCT	.2555
CO2	2.83 PCT	11.07 PCT	.9099	11.52 PCT	.9466
O2	.49 PCT	1.92 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	175
2	170
3	182
4	172
5	174
6	171
7	174
8	173

B-221

B-222

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 231-3

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	2000	90.	.929
SAMP	673	95.	.914
CARB	672	73.	.983

ODOMETER	17010
TEST MILES	3.270
TEST MINUTES	9.43
CALC. MILES/HR	20.81
COUNT RATIO	1.001
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	71.0

LICENSE NO.	345D93
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	7/11/67
TIME	2.10
GVW. LB	7500
LOAD. LB	1450
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK. SQ. IN.	4.9
PCV. CFM	1.8

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.12 IN.
HUMIDITY	68 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	4.021
MILES/GALLON	13.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	12.43
DILUTION RATIO	4.134
EXH/AIR RATIO	.975
SCF EXH/MILE	69.2
MILES/GALLON	13.4

IDLE

DWELL ANGLE	29
IGN. TIMING	-4.0
A/F RATIO	13.0
MAN. VAC.	19.0
RPM	450

ROUTE	CD-2
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.40
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2610 PPMC	10494 PPMC	.0261	10789 PPMC	.0268
HC FID					
TOTAL	4204 PPMC	16902 PPMC	.0421	17378 PPMC	.0432
OLEFINS	250 PPMC	1005 PPMC	.0025	1033 PPMC	.0026
AROMAT.	343 PPMC	1379 PPMC	.0017	1418 PPMC	.0017
PARAFS.	3611 PPMC	14518 PPMC	.0379	14927 PPMC	.0390
NOX	138 PPM	555 PPM	.0046	570 PPM	.0047
CO	1.19 PCT	4.78 PCT	.2407	4.92 PCT	.2474
CO2	2.78 PCT	11.18 PCT	.8834	11.49 PCT	.9082
O2	.33 PCT	1.33 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	175
2	170
3	182
4	172
5	174
6	171
7	174
8	173

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 301-1

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	80.	.960
SAMP	4014	83.	.951
CARB	3979	64.	1.014

ODOMETER	4471
TEST MILES	8.000
TEST MINUTES	17.79
CALC. MILES/HR	26.98
COUNT RATIO	1.009
AVE. COUNTS/MIN	275.2
CUB. FT./COUNT	.360
SCF AIR/MILE	178.4

LICENSE NO.	16M797
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	3/ 1/67
TIME	10.45
GVW, LB	30000
LOAD, LB	11000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.58 IN.
HUMIDITY	31 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.013
MILES/GALLON	7.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.15
DILUTION RATIO	3.149
EXH/AIR RATIO	.940
SCF EXH/MILE	167.7
MILES/GALLON	6.7

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	480

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	620 PPMC	1868 PPMC	.0113	1952 PPMC	.0118
HC FID TOTAL	1234 PPMC	3718 PPMC	.0224	3886 PPMC	.0234
NOX	659 PPM	1986 PPM	.0397	2075 PPM	.0415
CO	.38 PCT	1.14 PCT	.1395	1.20 PCT	.1458
CO2	4.28 PCT	12.90 PCT	2.4694	13.48 PCT	2.5807
O2	.72 PCT	2.17 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	174
2	169
3	177
4	175
5	169
6	176
7	170
8	172

3011 CALIF. CYCLE

8d
1
223

B-224

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 301-2

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	78.	.967
SAMP	4056	82.	.954
CARB	4016	71.	.990

ODOMETER	4479
TEST MILES	8.000
TEST MINUTES	17.79
CALC. MILES/HR	26.98
COUNT RATIO	1.010
AVE. COUNTS/MIN	275.2
CUR. FT./COUNT	.360
SCF AIR/MILE	175.0

LICENSE NO.	16M797
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	366
TRANSMISSION	5M/
AXLE RATIO	7.17/9.77
CARB. NO.	C5
DIST. NO.	C5
AIR CL. NO.	C3

DATE	3/ 1/67
TIME	11.30
GVW, LB	30000
LOAD, LB	11000
PER CENT LOAD	50
MAXIMUM BHP	220
CL.MASK, SQ. IN.	.0
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	62 F
PRESSURE	29.48 IN.
HUMIDITY	32 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.999
MILES/GALLON	7.0

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.15
DILUTION RATIO	3.084
EXH/AIR RATIO	.940
SCF EXH/MILE	164.5
MILES/GALLON	6.8

IDLE

DWELL ANGLE	29
IGN. TIMING	-6.0
A/F RATIO	13.3
MAN. VAC.	19.0
RPM	480

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	670 PPMC	2009 PPMC	.0119	2066 PPMC	.0122
HC FID TOTAL	1285 PPMC	3854 PPMC	.0228	3963 PPMC	.0234
NOX	673 PPM	2018 PPM	.0397	2076 PPM	.0408
CO	.39 PCT	1.17 PCT	.1399	1.20 PCT	.1439
CO2	4.37 PCT	13.11 PCT	2.4630	13.48 PCT	2.5330
O2	.69 PCT	2.07 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	174
2	169
3	177
4	175
5	169
6	176
7	170
8	172

3012 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 303-1

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7500	71.	.990
SAMP	3413	82.	.954
CARB	3410	78.	.967

ODOMETER	28384
TEST MILES	9.200
TEST MINUTES	18.00
CALC. MILES/HR	30.67
COUNT RATIO	1.001
AVE. COUNTS/MIN	275.6
CUB. FT./COUNT	.359
SCF AIR/MILE	125.6

LICENSE NO.	15M618
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	330
TRANSMISSION	5M/
AXLE RATIO	5.83/8.11
CARB. NO.	F8
DIST. NO.	F8
AIR CL. NO.	F4

DATE	4/27/67
TIME	4.15
GVW, LB	20000
LOAD, LB	5000
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	.0
PCV, CFM	2.2

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	29.46 IN.
HUMIDITY	53 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.280
MILES/GALLON	9.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	14.43
DILUTION RATIO	3.299
EXH/AIR RATIO	.935
SCF EXH/MILE	117.5
MILES/GALLON	9.7

IDLE	
DWELL ANGLE	28
IGN. TIMING	-12.0
A/F RATIO	12.1
MAN. VAC.	19.5
RPM	500

ROUTE	CD-3
TRAFFIC	
RPM/MPH	
HIGH GEAR	52.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	515 PPMC	1689 PPMC	.0071	1699 PPMC	.0072
HC FID					
TOTAL	998 PPMC	3274 PPMC	.0138	3292 PPMC	.0139
OLEFINS	287 PPMC	941 PPMC	.0040	947 PPMC	.0040
AROMAT.	202 PPMC	663 PPMC	.0025	666 PPMC	.0025
PARAFS.	509 PPMC	1670 PPMC	.0074	1679 PPMC	.0074
NOX	653 PPM	2142 PPM	.0300	2154 PPM	.0302
CO	.29 PCT	.95 PCT	.0812	.96 PCT	.0817
CO2	4.07 PCT	13.35 PCT	1.7914	13.43 PCT	1.8015
O2	.77 PCT	2.53 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	144
2	140
3	145
4	150
5	135
6	149
7	142
8	149

3031 CALIF. CYCLE - ONE RUN ONLY.

R-225

B-227

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 304-6

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	3500	84.	.948
SAMP	2930	104.	.888
CARB	2936	90.	.929

ODOMETER	47699
TEST MILES	11.550
TEST MINUTES	17.83
CALC. MILES/HR	38.87
COUNT RATIO	.998
AVE. COUNTS/MIN	272.3
CUR. FT./COUNT	.364
SCF AIR/MILE	83.7

LICENSE NO.	5239CK
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	4.10/ .00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	4/24/67
TIME	1.30
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	65 F
PRESSURE	29.34 IN.
HUMIDITY	28 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.275
MILES/GALLON	13.0

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.76
DILUTION RATIO	2.275
EXH/AIR RATIO	.947
SCF EXH/MILE	79.3
MILES/GALLON	13.0

IDLE

DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	21.0
RPM	590

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	990 PPMC	2252 PPMC	.0064	2252 PPMC	.0064
HC FID					
TOTAL	1762 PPMC	4008 PPMC	.0114	4008 PPMC	.0114
OLEFINS	522 PPMC	1187 PPMC	.0034	1187 PPMC	.0034
AROMAT.	405 PPMC	921 PPMC	.0024	921 PPMC	.0024
PARAFS.	835 PPMC	1899 PPMC	.0057	1899 PPMC	.0057
NOX	1267 PPM	2882 PPM	.0273	2882 PPM	.0273
CO	.79 PCT	1.80 PCT	.1036	1.80 PCT	.1036
CO2	6.20 PCT	14.10 PCT	1.2770	14.10 PCT	1.2770
O2	.46 PCT	1.05 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.153 IS LOWER THAN 2.275 FROM NITROGEN COUNTS

3046 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 304-7

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4500	92.	.923
SAMP	2874	102.	.894
CAPB	2876	88.	.935

ODOMETER	47711
TEST MILES	11.200
TEST MINUTES	17.86
CALC. MILES/HR	37.63
COUNT RATIO	.999
AVE. COUNTS/MIN	330.4
CUB. FT./COUNT	.300
SCF AIR/MILE	70.4

LICENSE NO.	5239CK
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	3M/
AXLE RATIO	4.10/ .00
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	4/24/67
TIME	3.00
GVW, LB	7500
LOAD, LB	1400
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	65 F
PRESSURE	29.46 IN.
HUMIDITY	28 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.617
MILES/GALLON	15.8

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.75
DILUTION RATIO	2.617
EXH/AIR RATIO	.947
SCF EXH/MILE	66.7
MILES/GALLON	15.8

IDLE	
DWELL ANGLE	33
IGN. TIMING	-7.5
A/F RATIO	13.3
MAN. VAC.	21.0
RPM	590

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	705 PPMC	1845 PPMC	.0044	1845 PPMC	.0044
HC FID					
TOTAL	1383 PPMC	3620 PPMC	.0087	3620 PPMC	.0087
OLEFINS	430 PPMC	1125 PPMC	.0027	1125 PPMC	.0027
AROMAT.	327 PPMC	856 PPMC	.0019	856 PPMC	.0019
PARAFS.	626 PPMC	1638 PPMC	.0041	1638 PPMC	.0041
NOX	1107 PPM	2897 PPM	.0231	2897 PPM	.0231
CO	.68 PCT	1.78 PCT	.0863	1.78 PCT	.0863
CO2	5.27 PCT	13.79 PCT	1.0510	13.79 PCT	1.0510
O2	.42 PCT	1.10 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	160
2	167
3	163
4	159
5	161
6	160
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.532 IS LOWER THAN 2.617 FROM NITROGEN COUNTS

3047 CALIF. CYCLE

R-227

3228

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 305-5

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	6000	74.	.980
SAMP	2497	81.	.957
CARB	2498	85.	.945

ODOMETER	21387
TEST MILES	9.210
TEST MINUTES	17.99
CALC. MILES/HR	30.72
COUNT RATIO	1.000
AVE. COUNTS/MIN	275.6
CUR. FT./COUNT	.359
SCF AIR/MILE	90.3

LICENSE NO.	15M785
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	4M/
AXLE RATIO	6.33/8.81
CARB. NO.	F7
DIST. NO.	F7
AIR CL. NO.	F1

DATE	5/ 5/67
TIME	11.10
GVW, LB	18000
LOAD, LB	5800
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	63 F
PRESSURE	29.57 IN.
HUMIDITY	34 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.460
MILES/GALLON	11.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.51
DILUTION RATIO	3.460
EXH/AIR RATIO	.952
SCF EXH/MILE	86.0
MILES/GALLON	11.3

IDLE

DWELL ANGLE	36
IGN. TIMING	-6.0
A/F RATIO	13.2
MAN. VAC.	18.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	57.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	800 PPMC	2768 PPMC	.0086	2768 PPMC	.0086
HC FID					
TOTAL	1471 PPMC	5089 PPMC	.0157	5089 PPMC	.0157
OLEFINS	387 PPMC	1339 PPMC	.0041	1339 PPMC	.0041
AROMAT.	323 PPMC	1118 PPMC	.0031	1118 PPMC	.0031
PARAFS.	761 PPMC	2633 PPMC	.0085	2633 PPMC	.0085
NOX	747 PPM	2585 PPM	.0265	2585 PPM	.0265
CO	.70 PCT	2.42 PCT	.1514	2.42 PCT	.1514
CO2	4.15 PCT	14.36 PCT	1.4101	14.36 PCT	1.4101
O2	.59 PCT	2.04 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	164
3	169
4	165
5	162
6	164
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.174 IS LOWER THAN 3.460 FROM NITROGEN COUNTS

3055 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 305-6

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	6000	73.	.983
SAMP	2493	88.	.935
CARB	2507	79.	.964

ODOMETER	21408
TEST MILES	9.250
TEST MINUTES	17.99
CALC. MILES/HR	30.85
COUNT RATIO	.994
AVE. COUNTS/MIN	275.6
CUB. FT./COUNT	.359
SCF AIR/MILE	92.0

LICENSE NO.	15M785
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	4M/
AXLE RATIO	6.33/8.81
CARB. NO.	F7
DIST. NO.	F7
AIR CL. NO.	F1

DATE	5/ 5/67
TIME	2.05
GVW, LB	18000
LOAD, LB	5800
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	63 F
PRESSURE	29.53 IN.
HUMIDITY	34 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.530
MILES/GALLON	11.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.46
DILUTION RATIO	3.530
EXH/AIR RATIO	.953
SCF EXH/MILE	87.6
MILES/GALLON	11.8

IDLE

DWELL ANGLE	36
IGN. TIMING	-6.0
A/F RATIO	13.2
MAN. VAC.	18.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	57.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	700 PPMC	2471 PPMC	.0078	2471 PPMC	.0078
HC FID					
TOTAL	1354 PPMC	4780 PPMC	.0151	4780 PPMC	.0151
OLEFINS	412 PPMC	1454 PPMC	.0046	1454 PPMC	.0046
AROMAT.	181 PPMC	639 PPMC	.0016	639 PPMC	.0016
PARAFS.	761 PPMC	2686 PPMC	.0089	2686 PPMC	.0089
NOX	653 PPM	2305 PPM	.0241	2305 PPM	.0241
CO	.68 PCT	2.40 PCT	.1529	2.40 PCT	.1529
CO2	3.80 PCT	13.41 PCT	1.3424	13.41 PCT	1.3424
O2	.32 PCT	1.13 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	158
2	164
3	169
4	165
5	162
6	164
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.452 IS LOWER THAN 3.530 FROM NITROGEN COUNTS

3056 CALIF. CYCLE

B-229

B-230

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 308-6

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	70.	.993
SAMP	2778	78.	.967
CARB	2782	88.	.935

ODOMETER	8455
TEST MILES	9.860
TEST MINUTES	17.91
CALC. MILES/HR	33.03
COUNT RATIO	.999
AVE. COUNTS/MIN	272.3
CUB. FT./COUNT	.364
SCF AIR/MILE	92.5

LICENSE NO.	16M370
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	4.57/ .00
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	5/15/67
TIME	3.00
GVW, LB	7500
LOAD, LB	1500
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	60 F
PRESSURE	29.04 IN.
HUMIDITY	37 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.294
MILES/GALLON	11.6

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.47
DILUTION RATIO	2.294
EXH/AIR RATIO	.953
SCF EXH/MILE	88.1
MILES/GALLON	11.6

IDLE	
DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.7
MAN. VAC.	18.0
RPM	500

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	845 PPMC	1939 PPMC	.0061	1939 PPMC	.0061
HC FID					
TOTAL	1742 PPMC	3997 PPMC	.0127	3997 PPMC	.0127
OLEFINS	456 PPMC	1046 PPMC	.0033	1046 PPMC	.0033
AROMAT.	93 PPMC	213 PPMC	.0003	213 PPMC	.0003
PARAFS.	1193 PPMC	2737 PPMC	.0091	2737 PPMC	.0091
NOX	880 PPM	2019 PPM	.0212	2019 PPM	.0212
CO	1.05 PCT	2.41 PCT	.1543	2.41 PCT	.1543
CO2	5.95 PCT	13.65 PCT	1.3739	13.65 PCT	1.3739
O2	.49 PCT	1.12 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	163
3	163
4	166
5	165
6	163
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.207 IS LOWER THAN 2.294 FROM NITROGEN COUNTS

3086 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 308-7

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	9
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	3500	75.	.977
SAMP	2924	80.	.960
CARB	2930	90.	.929

ODOMETER	8465
TEST MILES	9.900
TEST MINUTES	17.95
CALC. MILES/HR	33.09
COUNT RATIO	.998
AVE. COUNTS/MIN	272.3
CUR. FT./COUNT	.364
SCF AIR/MILE	96.4

LICENSE NO.	16M370
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	4.57/ .00
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	5/15/67
TIME	4.15
GVW, LB	7500
LOAD, LB	1500
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	2.0

AMBIENT CONDITIONS

TEMP.	63 F
PRESSURE	29.05 IN.
HUMIDITY	34 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.217
MILES/GALLON	11.3

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.49
DILUTION RATIO	2.217
EXH/AIR RATIO	.952
SC EXH/MILE	91.8
MILES/GALLON	11.3

IDLE	
DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.7
MAN. VAC.	19.0
RPM	520

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	860 PPMC	1907 PPMC	.0063	1907 PPMC	.0063
HC FID					
TOTAL	1796 PPMC	3982 PPMC	.0131	3982 PPMC	.0131
OLEFINS	456 PPMC	1011 PPMC	.0033	1011 PPMC	.0033
AROMAT.	67 PPMC	149 PPMC	.0000	149 PPMC	.0000
PARAFS.	1273 PPMC	2822 PPMC	.0098	2822 PPMC	.0098
NOX	933 PPM	2069 PPM	.0227	2069 PPM	.0227
CO	1.05 PCT	2.33 PCT	.1554	2.33 PCT	.1554
CO2	6.08 PCT	13.48 PCT	1.4135	13.48 PCT	1.4135
O2	.50 PCT	1.11 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	163
3	163
4	166
5	165
6	163
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.163 IS LOWER THAN 2.217 FROM NITROGEN COUNTS

3087 CALIF. CYCLE - IDLE ADJUSTED.

8221

B-232

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 311-2

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8500	68.	1.000
SAMP	3605	84.	.948
CAPB	3607	100.	.900

ODOMETER	5150
TEST MILES	8.660
TEST MINUTES	18.00
CALC. MILES/HR	28.87
COUNT RATIO	.999
AVE. COUNTS/MIN	276.5
CUB. FT./COUNT	.358
SCF AIR/MILE	131.2

LICENSE NO.	15M791
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	6.50/ .00
CARB. NO.	F10
DIST. NO.	F10
AIR CL. NO.	F4

DATE	6/ 2/67
TIME	2.20
GVW, LB	22500
LOAD, LB	7250
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	61 F
PRESSURE	29.47 IN.
HUMIDITY	40 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.488
MILES/GALLON	7.9

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.22
DILUTION RATIO	3.488
EXH/AIR RATIO	.958
SCF EXH/MILE	125.6
MILES/GALLON	7.9

IDLE	
DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	12.9
MAN. VAC.	19.0
RPM	550

ROUTE	CD-4
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1350 PPMC	4709 PPMC	.0213	4709 PPMC	.0213
HC FID					
TOTAL	2226 PPMC	7764 PPMC	.0351	7764 PPMC	.0351
OLEFINS	596 PPMC	2079 PPMC	.0094	2079 PPMC	.0094
AROMAT.	703 PPMC	2452 PPMC	.0104	2452 PPMC	.0104
PARAFS.	927 PPMC	3233 PPMC	.0153	3233 PPMC	.0153
NOX	660 PPM	2302 PPM	.0345	2302 PPM	.0345
CO	.87 PCT	3.03 PCT	.2771	3.03 PCT	.2771
CO2	3.76 PCT	13.11 PCT	1.8815	13.11 PCT	1.8815
O2	.29 PCT	1.01 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	148
2	156
3	154
4	149
5	148
6	153
7	154
8	147

DIL. RATIO FROM CO/CO2 CALCN. = 3.391 IS LOWER THAN 3.488 FROM NITROGEN COUNTS

3112 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 311-3

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8500	83.	.951
SAMP	3860	82.	.954
CARB	3861	106.	.882

ODOMETER	5159
TEST MILES	8.630
TEST MINUTES	18.00
CALC. MILES/HR	28.77
COUNT RATIO	1.000
AVE. COUNTS/MIN	276.5
CUR. FT./COUNT	.358
SCF AIR/MILE	138.7

LICENSE NO.	15M791
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	6.50/ .00
CARB. NO.	F10
DIST. NO.	F10
AIR CL. NO.	F4

DATE	6/ 2/67
TIME	3.30
GVW, LB	22500
LOAD, LB	7250
PER CENT LOAD	50
MAXIMUM BHP	182
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	59 F
PRESSURE	29.57 IN.
HUMIDITY	44 PCT

	FROM NITROGEN COUNTS	FROM CO/CO2 CALCN.
AIR/FUEL RATIO		13.27
DILUTION RATIO	3.195	3.195
EXH/AIR RATIO		.957
SCF EXH/MILE		132.6
MILES/GALLON	7.5	7.5

IDLE	
DWELL ANGLE	28
IGN. TIMING	-10.0
A/F RATIO	12.9
MAN. VAC.	19.0
RPM	550

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	2000 PPMC	6390 PPMC	.0305	6390 PPMC	.0305
HC FID					
TOTAL	3206 PPMC	10242 PPMC	.0489	10242 PPMC	.0489
OLEFINS	821 PPMC	2623 PPMC	.0125	2623 PPMC	.0125
AROMAT.	822 PPMC	2626 PPMC	.0114	2626 PPMC	.0114
PARAFS.	1563 PPMC	4993 PPMC	.0250	4993 PPMC	.0250
NOX	680 PPM	2172 PPM	.0344	2172 PPM	.0344
CO	.90 PCT	2.88 PCT	.2773	2.88 PCT	.2773
CO2	4.08 PCT	13.03 PCT	1.9748	13.03 PCT	1.9748
O2	.32 PCT	1.02 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	148
2	156
3	154
4	149
5	148
6	153
7	154
8	147

DIL. RATIO FROM CO/CO2 CALCN. = 3.144 IS LOWER THAN 3.195 FROM NITROGEN COUNTS

3113 CALIF. CYCLE

B23

B-234

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 312-1

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7000	76.	.973
SAMP	2974	81.	.957
CARB	2975	90.	.929

ODOMETER	39230
TEST MILES	9.410
TEST MINUTES	17.95
CALC. MILES/HR	31.45
COUNT RATIO	1.000
AVE. COUNTS/MIN	276.5
CUR. FT./COUNT	.358
SCF AIR/MILE	102.9

LICENSE NO.	5220CD
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	4M/
AXLE RATIO	6.50/8.85
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	5/31/67
TIME	4.00
GVW, LB	19500
LOAD, LB	4000
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	57 F
PRESSURE	29.48 IN.
HUMIDITY	45 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.393
MILES/GALLON	10.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.54
DILUTION RATIO	3.393
EXH/AIR RATIO	.951
SCF EXH/MILE	97.9
MILES/GALLON	10.6

IDLE	
DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	13.1
MAN. VAC.	17.5
RPM	550
ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	51.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	615 PPMC	2087 PPMC	.0073	2087 PPMC	.0073
HC FID					
TOTAL	1407 PPMC	4775 PPMC	.0168	4775 PPMC	.0168
OLEFINS	543 PPMC	1843 PPMC	.0065	1843 PPMC	.0065
AROMAT.	335 PPMC	1137 PPMC	.0037	1137 PPMC	.0037
PARAFS.	529 PPMC	1795 PPMC	.0066	1795 PPMC	.0066
NOX	733 PPM	2487 PPM	.0291	2487 PPM	.0291
CO	.65 PCT	2.21 PCT	.1569	2.21 PCT	.1569
CO2	4.00 PCT	13.57 PCT	1.5174	13.57 PCT	1.5174
O2	.32 PCT	1.09 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	167
2	162
3	160
4	165
5	158
6	163
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.300 IS LOWER THAN 3.393 FROM NITROGEN COUNTS

3121 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 312-4

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	6
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	6000	93.	.920
SAMP	2958	89.	.932
CARB	2957	90.	.929

ODOMETER	39268
TEST MILES	9.400
TEST MINUTES	17.96
CALC. MILES/HR	31.40
COUNT RATIO	1.000
AVE. COUNTS/MIN	276.5
CUB. FT./COUNT	.358
SCF AIR/MILE	102.6

LICENSE NO.	5220CD
MODEL YEAR	1965
ENGINE TYPE	V-6
DISPLACEMENT	305
TRANSMISSION	4M/
AXLE RATIO	6.50/8.85
CARB. NO.	G1
DIST. NO.	G1
AIR CL. NO.	G1

DATE	6/ 1/67
TIME	1.15
GVW, LB	19500
LOAD, LB	4000
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	57 F
PRESSURE	29.55 IN.
HUMIDITY	46 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.002
MILES/GALLON	10.5

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.42
DILUTION RATIO	3.002
EXH/AIR RATIO	.954
SCF EXH/MILE	97.8
MILES/GALLON	10.5

IDLE	
DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	13.1
MAN. VAC.	17.5
RPM	550

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	51.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	765 PPMC	2297 PPMC	.0081	2297 PPMC	.0081
HC FID					
TOTAL	1733 PPMC	5203 PPMC	.0183	5203 PPMC	.0183
OLEFINS	640 PPMC	1921 PPMC	.0068	1921 PPMC	.0068
AROMAT.	440 PPMC	1321 PPMC	.0043	1321 PPMC	.0043
PARAFS.	653 PPMC	1960 PPMC	.0072	1960 PPMC	.0072
NOX	760 PPM	2282 PPM	.0267	2282 PPM	.0267
CO	.83 PCT	2.49 PCT	.1772	2.49 PCT	.1772
CO2	4.44 PCT	13.33 PCT	1.4896	13.33 PCT	1.4896
O2	.38 PCT	1.14 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	167
2	162
3	160
4	165
5	158
6	163
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.944 IS LOWER THAN 3.002 FROM NITROGEN COUNTS

3124 CALIF. CYCLE

B 1 2 3 5

B-236

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 313-5

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4500	82.	.954
SAMP	3134	85.	.945
CAR9	3126	68.	1.000

ODOMETER	40159
TEST MILES	9.020
TEST MINUTES	17.92
CALC. MILES/HR	30.20
COUNT RATIO	1.003
AVE. COUNTS/MIN	271.7
CUB. FT./COUNT	.364
SCF AIR/MILE	122.2

LICENSE NO.	7034CH
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	4M/
AXLE RATIO	5.87/ .00
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	5/29/67
TIME	4.30
GVW, LB	10000
LOAD, LB	2420
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	6.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	58 F
PRESSURE	29.22 IN.
HUMIDITY	53 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.450
MILES/GALLON	9.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.93
DILUTION RATIO	2.450
EXH/AIR RATIO	.944
SCF EXH/MILE	115.4
MILES/GALLON	9.4

IDLE

DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	20.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	57.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1020 PPMC	2499 PPMC	.0104	2499 PPMC	.0104
HC FID					
TOTAL	1946 PPMC	4768 PPMC	.0198	4768 PPMC	.0198
OLEFINS	666 PPMC	1632 PPMC	.0068	1632 PPMC	.0068
AROMAT.	480 PPMC	1176 PPMC	.0045	1176 PPMC	.0045
PARAFS.	800 PPMC	1960 PPMC	.0085	1960 PPMC	.0085
NOX	1133 PPM	2776 PPM	.0382	2776 PPM	.0382
CO	.60 PCT	1.47 PCT	.1233	1.47 PCT	.1233
CO2	5.52 PCT	13.53 PCT	1.7826	13.53 PCT	1.7826
O2	.53 PCT	1.30 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	168
3	165
4	163
5	163
6	165
7	168
8	160

DIL. RATIO FROM CO/CO2 CALCN. = 2.431 IS LOWER THAN 2.450 FROM NITROGEN COUNTS

3135 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 313-6

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4500	67.	1.003
SAMP	3045	81.	.957
CARB	3047	65.	1.010

ODOMETER	40168
TEST MILES	9.050
TEST MINUTES	17.92
CALC. MILES/HR	30.30
COUNT RATIO	.999
AVE. COUNTS/MIN	271.7
CUB. FT./COUNT	.364
SCF AIR/MILE	121.2

LICENSE NO.	7034CH
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	352
TRANSMISSION	4M/
AXLE RATIO	5.87/ .00
CARB. NO.	F2
DIST. NO.	F2
AIR CL. NO.	F2

DATE	5/31/67
TIME	11.00
GVW, LB	10000
LOAD, LB	2420
PER CENT LOAD	50
MAXIMUM BHP	164
CL.MASK, SQ. IN.	6.0
PCV, CFM	.0

AMBIENT CONDITIONS	
TEMP.	58 F
PRESSURE	29.48 IN.
HUMIDITY	44 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	2.549
MILES/GALLON	9.4

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	13.93
DILUTION RATIO	2.549
EXH/AIR RATIO	.944
SCF EXH/MILE	114.4
MILES/GALLON	9.4

IDLE	
DWELL ANGLE	30
IGN. TIMING	-6.0
A/F RATIO	13.8
MAN. VAC.	20.0
RPM	500

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	57.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1000 PPMC	2549 PPMC	.0105	2549 PPMC	.0105
HC FID					
TOTAL	1911 PPMC	4872 PPMC	.0200	4872 PPMC	.0200
OLEFINS	632 PPMC	1611 PPMC	.0066	1611 PPMC	.0066
AROMAT.	495 PPMC	1262 PPMC	.0048	1262 PPMC	.0048
PARAFS.	784 PPMC	1999 PPMC	.0086	1999 PPMC	.0086
NOX	1133 PPM	2888 PPM	.0395	2888 PPM	.0395
CO	.58 PCT	1.48 PCT	.1230	1.48 PCT	.1230
CO2	5.33 PCT	13.59 PCT	1.7761	13.59 PCT	1.7761
O2	.59 PCT	1.50 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	163
2	168
3	165
4	163
5	163
6	165
7	168
8	160

DIL. RATIO FROM CO/CO2 CALCN. = 2.517 IS LOWER THAN 2.549 FROM NITROGEN COUNTS

3136 CALIF. CYCLE

B-237

R-238

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 318-4

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	10000	87.	.938
SAMP	5369	100.	.900
CARB	5360	120.	.844

ODOMETER	34925
TEST MILES	11.280
TEST MINUTES	17.87
CALC. MILES/HR	37.87
COUNT RATIO	1.002
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	142.4

LICENSE NO.	5223CD
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	450
TRANSMISSION	5M/
AXLE RATIO	7.17/ .00
CARB. NO.	I4
DIST. NO.	I4
AIR CL. NO.	I3

DATE	6/13/67
TIME	2.15
GVW, LB	50000
LOAD, LB	18000
PER CENT LOAD	50
MAXIMUM BHP	199
CL.MASK, SQ. IN.	.0
PCV, CFM	1.5

AMBIENT CONDITIONS

TEMP.	70 F
PRESSURE	29.30 IN.
HUMIDITY	44 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.943
MILES/GALLON	7.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.04
DILUTION RATIO	2.943
EXH/AIR RATIO	.961
SCF EXH/MILE	136.9
MILES/GALLON	7.4

IDLE

DWELL ANGLE	30
IGN. TIMING	-5.0
A/F RATIO	12.2
MAN. VAC.	20.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.60
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	490 PPMC	1442 PPMC	.0071	1442 PPMC	.0071
HC FID					
TOTAL	1172 PPMC	3449 PPMC	.0170	3449 PPMC	.0170
OLEFINS	308 PPMC	906 PPMC	.0045	906 PPMC	.0045
AROMAT.	384 PPMC	1130 PPMC	.0052	1130 PPMC	.0052
PARAFS.	480 PPMC	1413 PPMC	.0073	1413 PPMC	.0073
NOX	560 PPM	1648 PPM	.0269	1648 PPM	.0269
CO	1.18 PCT	3.47 PCT	.3457	3.47 PCT	.3457
CO2	4.33 PCT	12.74 PCT	1.9928	12.74 PCT	1.9928
O2	.29 PCT	.85 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	158
3	154
4	160
5	156
6	157
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.879 IS LOWER THAN 2.943 FROM NITROGEN COUNTS

3184 CALIF. CYCLE - ONE RUN ONLY - CLUTCH FAILURE.

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 320-1

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	7500	92.	.923
SAMP	3742	95.	.914
CARB	3739	100.	.900

ODOMETER	10898
TEST MILES	9.060
TEST MINUTES	17.86
CALC. MILES/HR	30.44
COUNT RATIO	1.001
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	130.4

LICENSE NO.	7676CF
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	345
TRANSMISSION	5M/
AXLE RATIO	.00/6.40
CARB. NO.	I3
DIST. NO.	I3
AIR CL. NO.	I2

DATE	6/15/67
TIME	2.30
GVW, LB	24000
LOAD, LB	7825
PER CENT LOAD	50
MAXIMUM BHP	197
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	69 F
PRESSURE	29.17 IN.
HUMIDITY	68 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.024
MILES/GALLON	8.5

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.38
DILUTION RATIO	3.081
EXH/AIR RATIO	.954
SCF EXH/MILE	124.5
MILES/GALLON	8.3

IDLE	
DWELL ANGLE	26
IGN. TIMING	.0
A/F RATIO	12.8
MAN. VAC.	17.0
RPM	450
ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1020 PPMC	3084 PPMC	.0138	3143 PPMC	.0141
HC FID					
TOTAL	2051 PPMC	6202 PPMC	.0278	6320 PPMC	.0283
OLEFINS	457 PPMC	1382 PPMC	.0062	1408 PPMC	.0063
AROMAT.	554 PPMC	1675 PPMC	.0068	1707 PPMC	.0069
PARAFS.	1040 PPMC	3145 PPMC	.0148	3205 PPMC	.0150
NOX	531 PPM	1606 PPM	.0239	1636 PPM	.0243
CO	.83 PCT	2.51 PCT	.2272	2.56 PCT	.2315
CO2	4.22 PCT	12.76 PCT	1.8146	13.00 PCT	1.8490
O2	.48 PCT	1.45 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	172
3	162
4	164
5	168
6	161
7	165
8	165

3201 CALIF. CYCLE

B-239

R-240

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 320-2

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	2

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	7501	93.	.920
SAMP	3625	92.	.923
CARB	3620	93.	.920

ODOMETER	10910
TEST MILES	9.060
TEST MINUTES	17.86
CALC. MILES/HR	30.44
COUNT RATIO	1.001
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	129.1

LICENSE NO.	7676CF
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	345
TRANSMISSION	5M/
AXLE RATIO	.00/6.40
CARB. NO.	I3
DIST. NO.	I3
AIR CL. NO.	I2

DATE	6/15/67
TIME	3.30
GVW, LB	24000
LOAD, LB	7825
PER CENT LOAD	50
MAXIMUM BHP	197
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	70 F
PRESSURE	29.17 IN.
HUMIDITY	68 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.063
MILES/GALLON	8.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.51
DILUTION RATIO	3.135
EXH/AIR RATIO	.952
SCF EXH/MILE	122.9
MILES/GALLON	8.5

IDLE

DWELL ANGLE	26
IGN. TIMING	.0
A/F RATIO	12.8
MAN. VAC.	17.0
RPM	450

ROUTE	CD
TRAFFIC	

RPM/MPH

HIGH GEAR	56.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1050 PPMC	3216 PPMC	.0142	3292 PPMC	.0145
HC FID					
TOTAL	2049 PPMC	6275 PPMC	.0277	6424 PPMC	.0284
OLEFINS	516 PPMC	1580 PPMC	.0070	1618 PPMC	.0071
AROMAT.	460 PPMC	1409 PPMC	.0055	1442 PPMC	.0057
PARAFS.	1073 PPMC	3286 PPMC	.0152	3364 PPMC	.0156
NOX	497 PPM	1522 PPM	.0223	1558 PPM	.0229
CO	.71 PCT	2.17 PCT	.1943	2.23 PCT	.1989
CO2	4.20 PCT	12.86 PCT	1.8054	13.17 PCT	1.8484
O2	.43 PCT	1.32 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	171
2	172
3	162
4	164
5	168
6	161
7	165
8	165

3202 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 721-7

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	GMC
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	9900	92.	.923
SAMP	3297	100.	.900
CARB	3297	85.	.945

ODOMETER	130125
TEST MILES	9.790
TEST MINUTES	17.90
CALC. MILES/HR	32.82
COUNT RATIO	1.000
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	111.6

LICENSE NO.	263D29
MODEL YEAR	1964
ENGINE TYPE	V-6
DISPLACEMENT	351
TRANSMISSION	5M/
AXLE RATIO	5.57/8.85
CARB. NO.	G2
DIST. NO.	G4
AIR CL. NO.	G4

DATE	6/21/67
TIME	10.00
GVW, LB	26000
LOAD, LB	8000
PER CENT LOAD	50
MAXIMUM BHP	195
CL.MASK, SQ. IN.	.0
PCV, CFM	.0

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.04 IN.
HUMIDITY	59 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.801
MILES/GALLON	10.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.88
DILUTION RATIO	3.807
EXH/AIR RATIO	.945
SCF EXH/MILE	105.5
MILES/GALLON	10.4

IDLE

DWELL ANGLE	32
IGN. TIMING	-5.0
A/F RATIO	12.8
MAN. VAC.	18.0
RPM	550

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	55.50
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	500 PPMC	1901 PPMC	.0072	1903 PPMC	.0072
HC FID					
TOTAL	1036 PPMC	3938 PPMC	.0149	3944 PPMC	.0150
OLEFINS	249 PPMC	947 PPMC	.0036	948 PPMC	.0036
AROMAT.	381 PPMC	1448 PPMC	.0052	1450 PPMC	.0052
PARAFS.	406 PPMC	1543 PPMC	.0061	1546 PPMC	.0061
NOX	793 PPM	3014 PPM	.0380	3019 PPM	.0380
CO	.40 PCT	1.52 PCT	.1166	1.52 PCT	.1168
CO2	3.52 PCT	13.38 PCT	1.6121	13.40 PCT	1.6145
O2	.48 PCT	1.82 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	153
2	156
3	156
4	146
5	142
6	160
7	0
8	0

3213 CALIF. CYCLE

B-341

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 3223

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	COPR.
NITR	5000	93.	.920
SAMP	2618	96.	.911
CARB	2615	85.	.945

ODOMETER	25714
TEST MILES	10.130
TEST MINUTES	18.05
CALC. MILES/HR	33.67
COUNT RATIO	1.001
AVE. COUNTS/MIN	267.0
CUR. FT./COUNT	.371
SCF AIR/MILE	86.7

LICENSE NO.	MF8835
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	266
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/22/67
TIME	11.20
GVW, LB	7300
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM BHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	68 F
PRESSURE	29.10 IN.
HUMIDITY	61 PCT

FROM NITROGEN COUNTS		FROM CO/CO2 CALCN.	
DILUTION RATIO	2.929	AIR/FUEL RATIO	13.50
		DILUTION RATIO	2.929
		EXH/AIR RATIO	.952
		SCF EXH/MILE	82.5
MILES/GALLON	12.5	MILES/GALLON	12.5

IDLE	
DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1100 PPMC	3221 PPMC	.0096	3221 PPMC	.0096
HC FID					
TOTAL	2168 PPMC	6349 PPMC	.0188	6349 PPMC	.0188
OLEFINS	339 PPMC	993 PPMC	.0029	993 PPMC	.0029
AROMAT.	731 PPMC	2141 PPMC	.0059	2141 PPMC	.0059
PARAFS.	1098 PPMC	3216 PPMC	.0100	3216 PPMC	.0100
NOX	471 PPM	1379 PPM	.0136	1379 PPM	.0136
CO	.78 PCT	2.28 PCT	.1370	2.28 PCT	.1370
CO2	4.55 PCT	13.32 PCT	1.2556	13.32 PCT	1.2556
O2	.36 PCT	1.05 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	157
3	149
4	158
5	162
6	154
7	158
8	156

DIL. RATIO FROM CO/CO2 CALCN. = 2.892 IS LOWER THAN 2.929 FROM NITROGEN COUNTS

3223 CALIF. CYCLE

B-242

B-246

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 322-4

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5000	98.	.905
SAMP	2654	87.	.938
CARB	2645	86.	.941

ODOMETER	25725
TEST MILES	10.170
TEST MINUTES	18.04
CALC. MILES/HR	33.82
COUNT RATIO	1.003
AVE. COUNTS/MIN	267.0
CUB. FT./COUNT	.371
SCF AIR/MILE	87.2

LICENSE NO.	MF8835
MODEL YEAR	1965
ENGINE TYPE	V-8
DISPLACEMENT	266
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/22/67
TIME	2.30
GVW, LB	7300
LOAD, LB	725
PER CENT LOAD	50
MAXIMUM RHP	155
CL.MASK, SQ. IN.	.0
PCV, CFM	1.6

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.10 IN.
HUMIDITY	53 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.818
MILES/GALLON	12.4

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.50
DILUTION RATIO	2.818
EXH/AIR RATIO	.952
SCF EXH/MILE	83.0
MILES/GALLON	12.4

IDLE	
DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	525
ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.90
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1200 PPMC	3381 PPMC	.0101	3381 PPMC	.0101
HC FID					
TOTAL	2303 PPMC	6489 PPMC	.0194	6489 PPMC	.0194
OLEFINS	327 PPMC	921 PPMC	.0027	921 PPMC	.0027
AROMAT.	872 PPMC	2457 PPMC	.0069	2457 PPMC	.0069
PARAFS.	1104 PPMC	3111 PPMC	.0097	3111 PPMC	.0097
NOX	529 PPM	1491 PPM	.0148	1491 PPM	.0148
CO	.81 PCT	2.28 PCT	.1378	2.28 PCT	.1378
CO2	4.74 PCT	13.36 PCT	1.2667	13.36 PCT	1.2667
O2	.40 PCT	1.13 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	157
2	157
3	149
4	158
5	162
6	154
7	158
8	156

DIL. RATIO FROM CO/CO2 CALCN. = 2.776 IS LOWER THAN 2.818 FROM NITROGEN COUNTS

3224 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 3244-4

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	4

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	7000	80.	.932
SAMP	2429	82.	.923
CARB	2428	103.	.891

ODOMETER	40765
TEST MILES	9.190
TEST MINUTES	17.89
CALC. MILES/HR	30.82
COUNT RATIO	1.000
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	83.4

LICENSE NO.	4407DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/27/67
TIME	1.50
GVW. LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM RHP	170
CL.MASK. SQ. IN.	4.9
PCV. CFM	2.2

AMBIENT CONDITIONS

TEMP.	71 F
PRESSURE	29.36 IN.
HUMIDITY	50 PCT

	FROM NITROGEN COUNTS	FROM CO/CO2 CALCN.
AIR/FUEL RATIO		13.45
DILUTION RATIO	3.910	3.910
EXH/AIR RATIO		.953
SCF EXH/MILE		79.5
MILES/GALLON	13.0	13.0

IDLE	
DWELL ANGLE	34
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	17.0
RPM	450

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	59.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	560 PPMC	2190 PPMC	.0063	2190 PPMC	.0063
HC FID					
TOTAL	1126 PPMC	4403 PPMC	.0126	4403 PPMC	.0126
OLEFINS	186 PPMC	727 PPMC	.0021	727 PPMC	.0021
AROMAT.	287 PPMC	1122 PPMC	.0029	1122 PPMC	.0029
PARAFS.	653 PPMC	2553 PPMC	.0077	2553 PPMC	.0077
NOX	628 PPM	2456 PPM	.0233	2456 PPM	.0233
CO	.62 PCT	2.42 PCT	.1401	2.42 PCT	.1401
CO2	3.42 PCT	13.37 PCT	1.2142	13.37 PCT	1.2142
O2	.40 PCT	1.56 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	146
2	151
3	160
4	155
5	158
6	150
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 3.831 IS LOWER THAN 3.910 FROM NITROGEN COUNTS

3244 CALIF. CYCLE

8-24

B-245

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 3245

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	4

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	5900	90.	.902
SAMP	2437	102.	.894
CARB	2437	94.	.917

ODOMETER	40780
TEST MILES	9.200
TEST MINUTES	17.82
CALC. MILES/HR	30.98
COUNT RATIO	1.000
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	86.1

LICENSE NO.	4407DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/27/67
TIME	3.05
GVW. LB	19500
LOAD. LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK. SQ. IN.	4.9
PCV. CFM	2.2

AMBIENT CONDITIONS

TEMP.	68 F
PRESSURE	29.35 IN.
HUMIDITY	59 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.072
MILES/GALLON	13.1

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.50
DILUTION RATIO	3.095
EXH/AIR RATIO	.952
SCF EXH/MILE	82.0
MILES/GALLON	13.0

IDLE

DWELL ANGLE	34
IGN. TIMING	-4.0
A/F RATIO	12.6
MAN. VAC.	18.0
RPM	450

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	59.30
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	580 PPMC	1782 PPMC	.0053	1795 PPMC	.0053
HC FID					
TOTAL	1199 PPMC	3683 PPMC	.0109	3711 PPMC	.0109
OLEFINS	227 PPMC	697 PPMC	.0021	703 PPMC	.0021
AROMAT.	329 PPMC	1011 PPMC	.0027	1018 PPMC	.0027
PARAFS.	643 PPMC	1975 PPMC	.0061	1990 PPMC	.0062
NOX	759 PPM	2331 PPM	.0228	2349 PPM	.0230
CO	.73 PCT	2.24 PCT	.1337	2.26 PCT	.1347
CO2	4.25 PCT	13.05 PCT	1.2228	13.16 PCT	1.2322
O2	.51 PCT	1.57 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	146
2	151
3	160
4	155
5	158
6	150
7	0
8	0

3245 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 325-3

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4000	78.	.967
SAMP	2429	82.	.954
CAPB	2425	81.	.957

ODOMETER	14726
TEST MILES	9.230
TEST MINUTES	18.00
CALC. MILES/HR	30.77
COUNT RATIO	1.002
AVE. COUNTS/MIN	267.0
CUR. FT./COUNT	.371
SCF AIR/MILE	89.6

LICENSE NO.	7686CF
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F4
DIST. NO.	F4
AIR CL. NO.	F1

DATE	6/28/67
TIME	1.40
GVW. LB	7500
LOAD. LB	1825
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK. SQ. IN.	.0
PCV. CFM	1.9

AMBIENT CONDITIONS

TEMP.	68 F
PRESSURE	29.16 IN.
HUMIDITY	61 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.669
MILES/GALLON	11.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.16
DILUTION RATIO	2.669
EXH/AIR RATIO	.959
SCF EXH/MILE	85.9
MILES/GALLON	11.6

IDLE

DWELL ANGLE	39
IGN. TIMING	-6.0
A/F RATIO	12.8
MAN. VAC.	18.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1335 PPMC	3563 PPMC	.0110	3563 PPMC	.0110
HC FID					
TOTAL	2468 PPMC	6587 PPMC	.0203	6587 PPMC	.0203
OLEFINS	370 PPMC	987 PPMC	.0030	987 PPMC	.0030
AROMAT.	727 PPMC	1940 PPMC	.0054	1940 PPMC	.0054
PARAFS.	1371 PPMC	3659 PPMC	.0119	3659 PPMC	.0119
NOX	952 PPM	2541 PPM	.0261	2541 PPM	.0261
CO	1.20 PCT	3.20 PCT	.2000	3.20 PCT	.2000
CO2	4.88 PCT	13.02 PCT	1.2776	13.02 PCT	1.2776
O2	.38 PCT	1.01 PCT			

COMPRESSION PRESSURE AT 200 RPM. PSIG

1	183
2	197
3	196
4	191
5	196
6	185
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.592 IS LOWER THAN 2.669 FROM NITROGEN COUNTS

3253 CALIF. CYCLE

B-241

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 325-4

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	FORD
FLOW ELEM.	9
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	4101	85.	.945
SAMP	2429	83.	.951
CARB	2429	82.	.954

ODOMETER	14736
TEST MILES	9.230
TEST MINUTES	17.98
CALC. MILES/HR	30.80
COUNT RATIO	1.000
AVE. COUNTS/MIN	267.0
CUR. FT./COUNT	.371
SCF AIR/MILE	89.5

LICENSE NO.	7686CF
MODEL YEAR	1966
ENGINE TYPE	I-6
DISPLACEMENT	240
TRANSMISSION	3M/
AXLE RATIO	4.56/ .00
CARB. NO.	F4
DIST. NO.	F4
AIR CL. NO.	F1

DATE	6/28/67
TIME	2.40
GVW, LB	7500
LOAD, LB	1825
PER CENT LOAD	50
MAXIMUM BHP	129
CL.MASK, SQ. IN.	.0
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	69 F
PRESSURE	29.16 IN.
HUMIDITY	55 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.677
MILES/GALLON	11.7

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.17
DILUTION RATIO	2.677
EXH/AIR RATIO	.959
SCF EXH/MILE	85.8
MILES/GALLON	11.7

IDLE

DWELL ANGLE	39
IGN. TIMING	-6.0
A/F RATIO	12.8
MAN. VAC.	18.0
RPM	525

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	49.70
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1280 PPMC	3427 PPMC	.0106	3427 PPMC	.0106
HC FID					
TOTAL	2331 PPMC	6241 PPMC	.0193	6241 PPMC	.0193
OLEFINS	341 PPMC	913 PPMC	.0028	913 PPMC	.0028
AROMAT.	682 PPMC	1826 PPMC	.0051	1826 PPMC	.0051
PARAFS.	1308 PPMC	3502 PPMC	.0113	3502 PPMC	.0113
NOX	952 PPM	2549 PPM	.0261	2549 PPM	.0261
CO	1.18 PCT	3.16 PCT	.1970	3.16 PCT	.1970
CO2	4.86 PCT	13.01 PCT	1.2750	13.01 PCT	1.2750
O2	.34 PCT	.91 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	183
2	197
3	196
4	191
5	196
6	185
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.607 IS LOWER THAN 2.677 FROM NITROGEN COUNTS

3254 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 326-3

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	6000	76.	.973
SAMP	3014	89.	.932
CARB	3034	96.	.911

ODOMETER	35202
TEST MILES	9.720
TEST MINUTES	17.87
CALC. MILES/HR	32.64
COUNT RATIO	.993
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	99.7

LICENSE NO.	7612CF
MODEL YEAR	1964
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.17/ 00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/30/67
TIME	9.50
GVW, LB	20000
LOAD, LB	5500
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	1.4

	FROM NITROGEN COUNTS	FROM CO/CO2 CALCN.
AMBIENT CONDITIONS		AIR/FUEL RATIO 13.49
	DILUTION RATIO 3.078	DILUTION RATIO 3.078
TEMP. 68 F		EXH/AIR RATIO .952
PRESSURE 29.08 IN.		SCF EXH/MILE 95.0
HUMIDITY 66 PCT	MILES/GALLON 11.1	MILES/GALLON 11.1

IDLE	
DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.7
MAN. VAC.	19.0
RPM	500
ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	54.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	660 PPMC	2032 PPMC	.0069	2032 PPMC	.0069
HC FID					
TOTAL	1412 PPMC	4347 PPMC	.0148	4347 PPMC	.0148
OLEFINS	151 PPMC	465 PPMC	.0016	465 PPMC	.0016
AROMAT.	493 PPMC	1518 PPMC	.0048	1518 PPMC	.0048
PARAFS.	768 PPMC	2364 PPMC	.0085	2364 PPMC	.0085
NOX	451 PPM	1388 PPM	.0157	1388 PPM	.0157
CO	.74 PCT	2.28 PCT	.1573	2.28 PCT	.1573
CO2	4.28 PCT	13.18 PCT	1.4292	13.18 PCT	1.4292
O2	.40 PCT	1.23 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	128
2	142
3	120
4	146
5	158
6	135
7	150
8	152

DIL. RATIO FROM CO/CO2 CALCN. = 3.072 IS LOWER THAN 3.078 FROM NITROGEN COUNTS

3263 CALIF. CYCLE

B-248

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 326-4

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	IHC
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	6000	97.	.908
SAMP	3177	97.	.908
CARB	3200	102.	.894

ODOMETER	35213
TEST MILES	9.740
TEST MINUTES	17.86
CALC. MILES/HR	32.72
COUNT RATIO	.993
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	103.0

LICENSE NO.	7612CF
MODEL YEAR	1964
ENGINE TYPE	V-8
DISPLACEMENT	304
TRANSMISSION	5M/
AXLE RATIO	6.17/ .00
CARB. NO.	I2
DIST. NO.	I2
AIR CL. NO.	I2

DATE	6/30/67
TIME	11.00
GVW, LB	20000
LOAD, LB	5500
PER CENT LOAD	50
MAXIMUM BHP	193
CL.MASK, SQ. IN.	.0
PCV, CFM	1.4

AMBIENT CONDITIONS

TEMP.	67 F
PRESSURE	29.08 IN.
HUMIDITY	66 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.889
MILES/GALLON	10.8

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.50
DILUTION RATIO	2.889
EXH/AIR RATIO	.952
SCF EXH/MILE	98.1
MILES/GALLON	10.8

IDLE

DWELL ANGLE	32
IGN. TIMING	.0
A/F RATIO	12.7
MAN. VAC.	19.0
RPM	500

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	54.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	730 PPMC	2109 PPMC	.0074	2109 PPMC	.0074
HC FID					
TOTAL	1474 PPMC	4258 PPMC	.0150	4258 PPMC	.0150
OLEFINS	179 PPMC	517 PPMC	.0018	517 PPMC	.0018
AROMAT.	441 PPMC	1274 PPMC	.0041	1274 PPMC	.0041
PARAFS.	854 PPMC	2467 PPMC	.0091	2467 PPMC	.0091
NOX	483 PPM	1395 PPM	.0163	1395 PPM	.0163
CO	.78 PCT	2.25 PCT	.1606	2.25 PCT	.1606
CO2	4.56 PCT	13.17 PCT	1.4756	13.17 PCT	1.4756
O2	.43 PCT	1.24 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	128
2	142
3	120
4	146
5	158
6	135
7	150
8	152

DIL. RATIO FROM CO/CO2 CALCN. = 2.886 IS LOWER THAN 2.889 FROM NITROGEN COUNTS

3264 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 327-1

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	5000	101.	.897
SAMP	2995	110.	.871
CARB	2998	100.	.900

ODOMETER	28760
TEST MILES	8.000
TEST MINUTES	18.03
CALC. MILES/HR	26.62
COUNT RATIO	.999
AVE. COUNTS/MIN	271.3
CUR. FT./COUNT	.365
SCF AIR/MILE	117.4

LICENSE NO.	4405DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/30/67
TIME	3.20
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	70 F
PRESSURE	29.05 IN.
HUMIDITY	65 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.718
MILES/GALLON	8.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.32
DILUTION RATIO	2.718
EXH/AIR RATIO	.955
SCF EXH/MILE	112.2
MILES/GALLON	8.9

IDLE

DWELL ANGLE	39
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	450

ROUTE	
TRAFFIC	CD
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1070 PPMC	2908 PPMC	.0117	2908 PPMC	.0117
HC FID					
TOTAL	2079 PPMC	5651 PPMC		5651 PPMC	
OLEFINS	263 PPMC	715 PPMC	.0228	715 PPMC	.0228
AROMAT.	596 PPMC	1620 PPMC	.0029	1620 PPMC	.0029
PARAFS.	1220 PPMC	3316 PPMC	.0059	3316 PPMC	.0059
			.0140		.0140
NOX	814 PPM	2212 PPM	.0296	2212 PPM	.0296
CO	1.03 PCT	2.80 PCT		2.80 PCT	
CO2	4.95 PCT	13.45 PCT	.2284	13.45 PCT	.2284
O2	.52 PCT	1.41 PCT	1.7243		1.7243

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	157
3	155
4	159
5	155
6	159
7	0
8	0

DIL. RATIO FROM CO/CO2 CALCN. = 2.610 IS LOWER THAN 2.718 FROM NITROGEN COUNTS

3271 CALIF. CYCLE

B-250

B-251

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 327-2

ROAD OPN.	DETROIT
WT. CLASS	3
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	6
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5000	110.	.871
SAMP	2907	94.	.917
CARB	2916	90.	.929

ODOMETER	28769
TEST MILES	8.200
TEST MINUTES	18.02
CALC. MILES/HR	27.30
COUNT RATIO	.997
AVE. COUNTS/MIN	271.3
CUR. FT./COUNT	.365
SCF AIR/MILE	115.4

LICENSE NO.	4405DZ
MODEL YEAR	1965
ENGINE TYPE	I-6
DISPLACEMENT	292
TRANSMISSION	4M/
AXLE RATIO	6.40/8.72
CARB. NO.	C4
DIST. NO.	C4
AIR CL. NO.	C3

DATE	6/30/67
TIME	3.40
GVW, LB	19500
LOAD, LB	5775
PER CENT LOAD	50
MAXIMUM BHP	170
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.9

AMBIENT CONDITIONS

TEMP.	68 F
PRESSURE	29.05 IN.
HUMIDITY	58 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	2.634
MILES/GALLON	9.6

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.33
DILUTION RATIO	2.667
EXH/AIR RATIO	.955
SCF EXH/MILE	110.3
MILES/GALLON	9.5

IDLE

DWELL ANGLE	39
IGN. TIMING	-4.0
A/F RATIO	12.5
MAN. VAC.	19.0
RPM	450

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	56.80
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	950 PPMC	2502 PPMC	.0099	2533 PPMC	.0100
HC FID					
TOTAL	1894 PPMC	4989 PPMC	.0198	5051 PPMC	.0200
OLEFINS	281 PPMC	740 PPMC	.0029	749 PPMC	.0030
AROMAT.	463 PPMC	1220 PPMC	.0043	1235 PPMC	.0043
PARAFS.	1150 PPMC	3029 PPMC	.0126	3067 PPMC	.0128
NOX	752 PPM	1981 PPM	.0261	2005 PPM	.0264
CO	1.00 PCT	2.63 PCT	.2112	2.67 PCT	.2138
CO2	4.85 PCT	12.78 PCT	1.6091	12.93 PCT	1.6290
O2	.59 PCT	1.55 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	155
2	157
3	155
4	159
5	155
6	159
7	0
8	0

3272 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 328-3

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	8000	97.	.908
SAMP	3765	105.	.885
CARB	3762	83.	.951

ODOMETER	34408
TEST MILES	8.720
TEST MINUTES	17.85
CALC. MILES/HR	29.31
COUNT RATIO	1.001
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	146.7

LICENSE NO.	9668CD
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	7.10/9.01
CARB. NO.	D3
DIST. NO.	D2
AIR CL. NO.	I3

DATE	7/ 6/67
TIME	2.45
GVW, LB	25000
LOAD, LB	9000
PER CENT LOAD	50
MAXIMUM BHP	194
CL.MASK, SQ. IN.	8.0
PCV, CFM	.5

AMBIENT CONDITIONS

TEMP.	66 F
PRESSURE	29.50 IN.
HUMIDITY	48 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.180
MILES/GALLON	7.1

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.98
DILUTION RATIO	3.180
EXH/AIR RATIO	.963
SCF EXH/MILE	141.2
MILES/GALLON	7.1

IDLE	
DWELL ANGLE	30
IGN. TIMING	-10.0
A/F RATIO	12.2
MAN. VAC.	17.0
RPM	475

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1444 PPMC	4592 PPMC	.0233	4592 PPMC	.0233
HC FID					
TOTAL	2514 PPMC	7995 PPMC	.0406	7995 PPMC	.0406
OLEFINS	211 PPMC	671 PPMC	.0034	671 PPMC	.0034
AROMAT.	436 PPMC	1387 PPMC	.0056	1387 PPMC	.0056
PARAFS.	1867 PPMC	5937 PPMC	.0316	5937 PPMC	.0316
NOX	669 PPM	2127 PPM	.0359	2127 PPM	.0359
CO	1.12 PCT	3.56 PCT	.3656	3.56 PCT	.3656
CO2	3.91 PCT	12.43 PCT	2.0053	12.43 PCT	2.0053
O2	.29 PCT	.92 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	124
2	124
3	123
4	116
5	123
6	125
7	126
8	125

DIL. RATIO FROM CO/CO2 CALCN. = 3.164 IS LOWER THAN 3.180 FROM NITROGEN COUNTS

3283 CALIF. CYCLE

B-2532

B-253

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 328-4

ROAD OPN.	DETROIT
WT. CLASS	4
LOAD	HALF
TRUCK MAKE	DODGE
FLOW ELEM.	4
TRUCK NUMBER	1

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	GAS TEMP. CORR.
NITR	8000	116.	.855
SAMP	3728	120.	.844
CARB	3725	85.	.945

ODOMETER	34417
TEST MILES	8.730
TEST MINUTES	17.84
CALC. MILES/HR	29.36
COUNT RATIO	1.001
AVE. COUNTS/MIN	270.1
CUR. FT./COUNT	.367
SCF AIR/MILE	143.7

LICENSE NO.	9668CD
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	361
TRANSMISSION	5M/
AXLE RATIO	7.10/9.01
CARB. NO.	D3
DIST. NO.	D2
AIR CL. NO.	I3

DATE	7/ 6/67
TIME	4.00
GVW. LB	25000
LOAD. LB	9000
PER CENT LOAD	50
MAXIMUM BHP	194
CL.MASK. SQ. IN.	8.0
PCV. CFM	.5

AMBIENT CONDITIONS

TEMP.	71 F
PRESSURE	29.50 IN.
HUMIDITY	52 PCT

FROM NITROGEN COUNTS	
DILUTION RATIO	3.173
MILES/GALLON	7.2

FROM CO/CO2 CALCN.	
AIR/FUEL RATIO	12.89
DILUTION RATIO	3.173
EXH/AIR RATIO	.965
SCF EXH/MILE	138.6
MILES/GALLON	7.2

IDLE		
DWELL	NGLE	30
IGN.	MING	-10.0
A/F R	IO	12.2
MAN.	C.	17.0
RPM		475

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	60.00
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1375 PPMC	4363 PPMC	.0217	4363 PPMC	.0217
HC FID					
TOTAL	2514 PPMC	7976 PPMC	.0398	7976 PPMC	.0398
OLEFINS	285 PPMC	904 PPMC	.0045	904 PPMC	.0045
AROMAT.	424 PPMC	1345 PPMC	.0053	1345 PPMC	.0053
PARAFS.	1805 PPMC	5727 PPMC	.0299	5727 PPMC	.0299
NOX	559 PPM	1774 PPM	.0293	1774 PPM	.0293
CO	1.20 PCT	3.81 PCT	.3836	3.81 PCT	.3836
CO2	3.89 PCT	12.34 PCT	1.9537	12.34 PCT	1.9537
O2	.32 PCT	1.02 PCT			

COMPRES ON PRESSURE AT 200 RPM. PSIG

1	124
2	124
3	123
4	116
5	123
6	125
7	126
8	125

DIL. RATIO FROM CO/CO2 CALCN. = 3.143 IS LOWER THAN 3.173 FROM NITROGEN COUNTS

3284 CALIF. CYCLE

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 331-1

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5000	76.	.973
SAMP	2433	85.	.945
CARB	2412	78.	.967

ODOMETER	16895
TEST MILES	10.770
TEST MINUTES	17.86
CALC. MILES/HR	36.18
COUNT RATIO	1.009
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	77.0

LICENSE NO.	345D93
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	7/ 7/67
TIME	10.40
GVW, LB	7500
LOAD, LB	1450
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	66 F
PRESSURE	29.46 IN.
HUMIDITY	69 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.118
MILES/GALLON	14.3

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.22
DILUTION RATIO	3.204
EXH/AIR RATIO	.958
SCF EXH/MILE	73.7
MILES/GALLON	13.9

IDLE

DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	13.0
MAN. VAC.	20.0
RPM	475

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.40
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	1280 PPMC	3991 PPMC	.0106	4102 PPMC	.0109
HC FID					
TOTAL	2183 PPMC	6806 PPMC	.0180	6995 PPMC	.0185
OLEFINS	116 PPMC	362 PPMC	.0010	372 PPMC	.0010
AROMAT.	552 PPMC	1721 PPMC	.0039	1769 PPMC	.0041
PARAFS.	1515 PPMC	4723 PPMC	.0131	4855 PPMC	.0135
NOX	116 PPM	362 PPM	.0032	372 PPM	.0033
CO	.92 PCT	2.87 PCT	.1537	2.95 PCT	.1579
CO2	3.98 PCT	12.41 PCT	1.0444	12.75 PCT	1.0735
O2	.47 PCT	1.47 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	175
2	170
3	182
4	172
5	174
6	171
7	174
8	173

3311 CALIF. CYCLE

8-254

B-253

PUBLIC HEALTH SERVICE CONTRACT
TRUCK EXHAUST EMISSION AND MODE CYCLE DEVELOPMENT PROGRAM

SUMMARY FOR RUN 331-2

ROAD OPN.	DETROIT
WT. CLASS	2
LOAD	HALF
TRUCK MAKE	CHEV
FLOW ELEM.	4
TRUCK NUMBER	3

CHASSIS DYNAM.

	COUNT	GAS TEMP. DEG.	CORR.
NITR	5000	91.	.926
SAMP	2437	97.	.908
CARB	2456	78.	.967

ODOMETER	16907
TEST MILES	10.770
TEST MINUTES	17.84
CALC. MILES/HR	36.22
COUNT RATIO	.992
AVE. COUNTS/MIN	270.1
CUB. FT./COUNT	.367
SCF AIR/MILE	78.1

LICENSE NO.	345D93
MODEL YEAR	1966
ENGINE TYPE	V-8
DISPLACEMENT	283
TRANSMISSION	3M/
AXLE RATIO	4.57/ .00
CARB. NO.	C3
DIST. NO.	C3
AIR CL. NO.	C3

DATE	7/ 7/67
TIME	11.30
GVW, LB	7500
LOAD, LB	1450
PER CENT LOAD	50
MAXIMUM BHP	175
CL.MASK, SQ. IN.	4.9
PCV, CFM	1.8

AMBIENT CONDITIONS

TEMP.	69 F
PRESSURE	29.45 IN.
HUMIDITY	75 PCT

FROM NITROGEN COUNTS

DILUTION RATIO	3.092
MILES/GALLON	13.9

FROM CO/CO2 CALCN.

AIR/FUEL RATIO	13.35
DILUTION RATIO	3.092
EXH/AIR RATIO	.955
SCF EXH/MILE	74.6
MILES/GALLON	13.9

IDLE	
DWELL ANGLE	32
IGN. TIMING	-4.0
A/F RATIO	13.0
MAN. VAC.	20.0
RPM	475

ROUTE	CD
TRAFFIC	
RPM/MPH	
HIGH GEAR	46.40
ACTUAL	.00

EFFLUENT	DILUTE EXHAUST	....NITROGEN SCALED.... UNDILUTED EXHAUST	EMISSION WT. LB/MILE	.....CO/CO2 SCALED..... UNDILUTED EXHAUST	EMISSION WT. LB/MILE
HC NDIR	990 PPMC	3061 PPMC	.0082	3061 PPMC	.0082
HC FID					
TOTAL	1798 PPMC	5560 PPMC	.0149	5560 PPMC	.0149
OLEFINS	270 PPMC	835 PPMC	.0022	835 PPMC	.0022
AROMAT.	244 PPMC	754 PPMC	.0015	754 PPMC	.0015
PARAFS.	1284 PPMC	3970 PPMC	.0112	3970 PPMC	.0112
NOX	126 PPM	390 PPM	.0035	390 PPM	.0035
CO	.85 PCT	2.63 PCT	.1425	2.63 PCT	.1425
CO2	4.20 PCT	12.99 PCT	1.1062	12.99 PCT	1.1062
O2	.43 PCT	1.33 PCT			

COMPRESSION PRESSURE AT 200 RPM, PSIG

1	175
2	170
3	182
4	172
5	174
6	171
7	174
8	173

DIL. RATIO FROM CO/CO2 CALCN. = 3.096 IS LOWER THAN 3.092 FROM NITROGEN COUNTS

3312 CALIF. CYCLE